

SEPTEMBER 15, 2020

**RULES COMMITTEE PRINT 116–63**  
**TEXT OF H.R. 4447**

**[Showing the text of the Clean Economy Jobs and Innovation Act.]**

**1 SECTION 1. SHORT TITLE.**

**2 (a) SHORT TITLE.**—This Act may be cited as the  
**3 “Clean Economy Jobs and Innovation Act”.**

**4 (b) TABLE OF CONTENTS.**—The table of contents for  
**5 this Act is as follows:**

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1     **TITLE I—ENERGY EFFICIENCY**

2             **Subtitle A—Buildings**

3             **PART 1—BUILDING ENERGY CODES**

4     **SEC. 1101. GREATER ENERGY EFFICIENCY IN BUILDING**  
5             **CODES.**

6             (a) DEFINITIONS.—Section 303 of the Energy Con-  
7     servation and Production Act (42 U.S.C. 6832) is amend-  
8     ed—

9             (1) by striking paragraph (14) and inserting  
10     the following:

11             “(14) MODEL BUILDING ENERGY CODE.—The  
12     term ‘model building energy code’ means a voluntary  
13     building energy code or standard developed and up-  
14     dated by interested persons, such as the code or  
15     standard developed by—

16             “(A) the Council of American Building Of-  
17     ficials, or its legal successor, International Code  
18     Council, Inc.;

19             “(B) the American Society of Heating, Re-  
20     frigerating, and Air-Conditioning Engineers; or

21             “(C) other appropriate organizations.”;

22     and

23     (2) by adding at the end the following:

24             “(17) IECC.—The term ‘IECC’ means the  
25     International Energy Conservation Code.

“(18) INDIAN TRIBE.—The term ‘Indian tribe’ has the meaning given the term in section 4 of the Native American Housing Assistance and Self-Determination Act of 1996 (25 U.S.C. 4103).”.

(b) STATE BUILDING ENERGY EFFICIENCY  
CODES.—Section 304 of the Energy Conservation and  
Production Act (42 U.S.C. 6833) is amended to read as  
follows:

9 "SEC. 304. UPDATING STATE BUILDING ENERGY EFFI-  
10 CIENCY CODES.

“(a) VOLUNTARY CODES AND STANDARDS.—Notwithstanding any other provision of this section, any model building code or standard established under section 304 shall not be binding on a State, local government, or Indian tribe as a matter of Federal law.

16 “(b) ACTION BY SECRETARY.—The Secretary shall—

“(1) encourage and support the adoption of building energy codes by States, Indian tribes, and, as appropriate, by local governments that meet or exceed the model building energy codes, or achieve equivalent or greater energy savings; and

22 “(2) support full compliance with the State and  
23 local codes.

24 “(c) STATE AND INDIAN TRIBE CERTIFICATION OF  
25 BUILDING ENERGY CODE UPDATES.—

1           “(1) REVIEW AND UPDATING OF CODES BY  
2 EACH STATE AND INDIAN TRIBE.—

3           “(A) IN GENERAL.—Not later than 2 years  
4 after the date of publication of a revision to a  
5 model building energy code, each State or In-  
6 dian tribe shall certify whether the State or In-  
7 dian tribe, respectively, has reviewed and up-  
8 dated the energy provisions of the building code  
9 of the State or Indian tribe, respectively.

10           “(B) DEMONSTRATION.—The certification  
11 shall include a demonstration of whether the  
12 energy savings for the code provisions that are  
13 in effect throughout the territory of the State  
14 or Indian tribe meet or exceed the energy sav-  
15 ings of the updated model building energy code.

16           “(C) NO MODEL BUILDING ENERGY CODE  
17 UPDATE.—If a model building energy code is  
18 not updated by a target date established under  
19 section 307(b)(2)(E), each State or Indian tribe  
20 shall, not later than 2 years after the specified  
21 date, certify whether the State or Indian tribe,  
22 respectively, has reviewed and updated the en-  
23 ergy provisions of the building code of the State  
24 or Indian tribe, respectively, to meet or exceed  
25 the target in section 307(b)(2).

1           “(2) VALIDATION BY SECRETARY.—Not later  
2           than 90 days after a State or Indian tribe certifi-  
3           cation under paragraph (1), the Secretary shall—

4                   “(A) determine whether the code provi-  
5                   sions of the State or Indian tribe, respectively,  
6                   meet the criteria specified in paragraph (1);  
7                   and

8                   “(B) if the determination is positive, vali-  
9                   date the certification.

10          “(d) IMPROVEMENTS IN COMPLIANCE WITH BUILD-  
11          ING ENERGY CODES.—

12           “(1) REQUIREMENT.—

13                   “(A) IN GENERAL.—Not later than 3 years  
14                   after the date of a certification under sub-  
15                   section (c), each State and Indian tribe shall  
16                   certify whether the State and Indian tribe, re-  
17                   spectively, has—

18                           “(i) achieved full compliance under  
19                           paragraph (3) with the applicable certified  
20                           State and Indian tribe building energy  
21                           code or with the associated model building  
22                           energy code; or

23                           “(ii) made significant progress under  
24                           paragraph (4) toward achieving compliance  
25                           with the applicable certified State and In-

1           dian tribe building energy code or with the  
2           associated model building energy code.

3           “(B) REPEAT CERTIFICATIONS.—If the  
4           State or Indian tribe certifies progress toward  
5           achieving compliance, the State or Indian tribe  
6           shall repeat the certification until the State or  
7           Indian tribe certifies that the State or Indian  
8           tribe has achieved full compliance, respectively.

9           “(2) MEASUREMENT OF COMPLIANCE.—A cer-  
10          tification under paragraph (1) shall include docu-  
11          mentation of the rate of compliance based on—

12           “(A) independent inspections of a random  
13           sample of the buildings covered by the code in  
14           the preceding year; or

15           “(B) an alternative method that yields an  
16           accurate measure of compliance.

17           “(3) ACHIEVEMENT OF COMPLIANCE.—A State  
18          or Indian tribe shall be considered to achieve full  
19          compliance under paragraph (1) if—

20           “(A) at least 90 percent of building space  
21           covered by the code in the preceding year sub-  
22           stantially meets all the requirements of the ap-  
23           plicable code specified in paragraph (1), or  
24           achieves equivalent or greater energy savings  
25           level; or

1           “(B) the estimated excess energy use of  
2           buildings that did not meet the applicable code  
3           specified in paragraph (1) in the preceding  
4           year, compared to a baseline of comparable  
5           buildings that meet this code, is not more than  
6           5 percent of the estimated energy use of all  
7           buildings covered by this code during the pre-  
8           ceding year.

9           “(4)     SIGNIFICANT     PROGRESS     TOWARD  
10          ACHIEVEMENT OF COMPLIANCE.—A State or Indian  
11          tribe shall be considered to have made significant  
12          progress toward achieving compliance for purposes  
13          of paragraph (1) if the State or Indian tribe—

14                 “(A) has developed and is implementing a  
15                 plan for achieving compliance during the 8-  
16                 year-period beginning on the date of enactment  
17                 of the Clean Economy Jobs and Innovation Act,  
18                 including annual targets for compliance and ac-  
19                 tive training and enforcement programs; and

20                 “(B) has met the most recent target under  
21                 subparagraph (A).

22           “(5) VALIDATION BY SECRETARY.—Not later  
23          than 90 days after a State or Indian tribe certifi-  
24          cation under paragraph (1), the Secretary shall—

1           “(A) determine whether the State or In-  
2           dian tribe has demonstrated meeting the cri-  
3           teria of this subsection, including accurate  
4           measurement of compliance; and

5           “(B) if the determination is positive, vali-  
6           date the certification.

7           “(e) STATES OR INDIAN TRIBES THAT DO NOT  
8           ACHIEVE COMPLIANCE.—

9           “(1) REPORTING.—A State or Indian tribe that  
10          has not made a certification required under sub-  
11          section (c) or (d) by the applicable deadline shall  
12          submit to the Secretary a report describing—

13               “(A) the status of the State or Indian tribe  
14               with respect to meeting the requirements and  
15               submitting the certification; and

16               “(B) a plan for meeting the requirements  
17               and submitting the certification.

18          “(2) FEDERAL SUPPORT.—For any State or In-  
19          dian tribe for which the Secretary has not validated  
20          a certification by a deadline under subsection (c) or  
21          (d), the lack of the certification may be a consider-  
22          ation for Federal support authorized under this sec-  
23          tion for code adoption and compliance activities.

24          “(3) LOCAL GOVERNMENT.—In any State or  
25          Indian tribe for which the Secretary has not vali-



1       dated a certification under subsection (c) or (d), a  
2       local government may be eligible for Federal support  
3       under subsections (f) and (g) by meeting the certifi-  
4       cation requirements of subsections (c) and (d).

5           “(4) REPORTS BY SECRETARY.—

6           “(A) IN GENERAL.—Not later than De-  
7       cember 31, 2021, and not less frequently than  
8       once every 3 years thereafter, the Secretary  
9       shall submit to Congress and publish a report  
10      describing—

11           “(i) the status of model building en-  
12      ergy codes;

13           “(ii) the status of code adoption and  
14      compliance in the States and Indian tribes;

15           “(iii) implementation of this section;  
16      and

17           “(iv) improvements in energy savings  
18      over time as result of the targets estab-  
19      lished under section 307(b)(2).

20           “(B) IMPACTS.—The report shall include  
21      estimates of impacts of past action under this  
22      section, and potential impacts of further action,  
23      on—

24           “(i) upfront financial and construction  
25      costs, cost benefits and returns (using in-

1 investment analysis), and lifetime energy use  
2 for buildings;

3 “(ii) resulting energy costs to individ-  
4 uals and businesses; and

5 “(iii) resulting overall annual building  
6 ownership and operating costs.

7 “(f) TECHNICAL ASSISTANCE TO STATES AND IN-  
8 DIAN TRIBES.—The Secretary shall provide technical as-  
9 sistance to States and Indian tribes to implement the goals  
10 and requirements of this section, including procedures and  
11 technical analysis for States and Indian tribes—

12 “(1) to improve and implement State residential  
13 and commercial building energy codes;

14 “(2) to demonstrate that the code provisions of  
15 the States and Indian tribes achieve equivalent or  
16 greater energy savings than the model building en-  
17 ergy codes and targets;

18 “(3) to document the rate of compliance with a  
19 building energy code; and

20 “(4) to otherwise promote the design and con-  
21 struction of energy- and water-efficient buildings.

22 “(g) AVAILABILITY OF INCENTIVE FUNDING.—

23 “(1) IN GENERAL.—The Secretary shall provide  
24 incentive funding to States and Indian tribes—

1 “(A) to implement the requirements of this  
2 section;

3 “(B) to improve and implement residential  
4 and commercial building energy codes, including  
5 increasing and verifying compliance with the  
6 codes and training of State, tribal, and local  
7 building code officials to implement and enforce  
8 the codes; and

9 “(C) to promote building energy and water  
10 efficiency through the use of the codes and  
11 standards.

12 “(2) ADDITIONAL FUNDING.—Additional fund-  
13 ing shall be provided under this subsection for im-  
14 plementation of a plan to achieve and document full  
15 compliance with residential and commercial building  
16 energy codes under subsection (d)—

17 “(A) to a State or Indian tribe for which  
18 the Secretary has validated a certification under  
19 subsection (c) or (d); and

20 “(B) in a State or Indian tribe that is not  
21 eligible under subparagraph (A), to a local gov-  
22 ernment that is eligible under this section.

23 “(3) TRAINING.—Of the amounts made avail-  
24 able under this subsection, the State or Indian tribe  
25 may use amounts required, but not to exceed

1       \$750,000 for a State, to train State and local build-  
2       ing code officials to implement and enforce codes de-  
3       scribed in paragraph (2).

4           “(4) LOCAL GOVERNMENTS.—States may share  
5       grants under this subsection with local governments  
6       that implement and enforce the codes.

7       “(h) STRETCH CODES AND ADVANCED STAND-  
8       ARDS.—

9           “(1) IN GENERAL.—The Secretary shall provide  
10      technical and financial support for the development  
11      of stretch codes and advanced standards for residen-  
12      tial and commercial buildings for use as—

13           “(A) an option for adoption as a building  
14      energy code by local, tribal, or State govern-  
15      ments; and

16           “(B) guidelines for energy-efficient build-  
17      ing design.

18       “(2) TARGETS.—The stretch codes and ad-  
19      vanced standards shall be designed—

20           “(A) to achieve substantial energy savings  
21      compared to the model building energy codes;  
22      and

23           “(B) to meet targets under section 307(b),  
24      if available, at least 3 to 6 years in advance of  
25      the target years.

1       “(i) STUDIES.—The Secretary, in consultation with  
2 building science experts from the National Laboratories  
3 and institutions of higher education, designers and build-  
4 ers of energy-efficient residential and commercial build-  
5 ings, code officials, code and standards developers, and  
6 other stakeholders, shall undertake a study of the feasi-  
7 bility, impact, economics, and merit of—

8           “(1) code and standards improvements that  
9 would require that buildings be designed, sited, and  
10 constructed in a manner that makes the buildings  
11 more adaptable in the future to become zero-net-en-  
12 ergy after initial construction, as advances are  
13 achieved in energy-saving technologies;

14           “(2) code procedures to incorporate measured  
15 lifetimes, not just first-year energy use, in trade-offs  
16 and performance calculations;

17           “(3) legislative options for increasing energy  
18 savings from building energy codes and standards,  
19 including additional incentives for effective State  
20 and local action, and verification of compliance with  
21 and enforcement of a code or standard other than by  
22 a State or local government; and

23           “(4) code and standards improvements that  
24 consider energy efficiency and water efficiency and,  
25 to the maximum extent practicable, consider energy

1 efficiency and water efficiency in an integrated man-  
2 ner.

3 “(j) EFFECT ON OTHER LAWS.—Nothing in this sec-  
4 tion or section 307 supersedes or modifies the application  
5 of sections 321 through 346 of the Energy Policy and  
6 Conservation Act (42 U.S.C. 6291 et seq.).

7 “(k) AUTHORIZATION OF APPROPRIATIONS.—There  
8 is authorized to be appropriated to carry out this section  
9 and section 307 \$200,000,000, to remain available until  
10 expended.”.

11 (c) FEDERAL BUILDING ENERGY EFFICIENCY  
12 STANDARDS.—Section 305 of the Energy Conservation  
13 and Production Act (42 U.S.C. 6834) is amended by strik-  
14 ing “voluntary building energy code” each place it appears  
15 in subsections (a)(2)(B) and (b) and inserting “model  
16 building energy code”.

17 (d) MODEL BUILDING ENERGY CODES.—

18 (1) IN GENERAL.—Section 307 of the Energy  
19 Conservation and Production Act (42 U.S.C. 6836)  
20 is amended to read as follows:

21 **“SEC. 307. SUPPORT FOR MODEL BUILDING ENERGY**  
22 **CODES.**

23 “(a) IN GENERAL.—The Secretary shall support the  
24 updating of model building energy codes.

25 “(b) TARGETS.—

1           “(1) IN GENERAL.—The Secretary shall sup-  
2           port the updating of the model building energy codes  
3           to enable the achievement of aggregate energy sav-  
4           ings targets established under paragraph (2).

5           “(2) TARGETS.—

6           “(A) IN GENERAL.—The Secretary shall  
7           work with State, Indian tribes, local govern-  
8           ments, code and standards developers (such as  
9           the entities described in section 303(14)), and  
10          other interested parties to support the updating  
11          of model building energy codes by establishing  
12          1 or more national aggregate energy savings  
13          targets to achieve the purposes of this section.

14          “(B) SEPARATE TARGETS.—The Secretary  
15          shall establish separate targets for commercial  
16          and residential buildings.

17          “(C) BASELINES.—The baseline for updat-  
18          ing model building energy codes shall be the  
19          2009 IECC for residential buildings and  
20          ASHRAE Standard 90.1–2010 for commercial  
21          buildings.

22          “(D) CODE CYCLES.—The targets estab-  
23          lished under subparagraph (A) shall align with  
24          the respective code development cycles deter-  
25          mined by the model building energy code-setting

1 and standards development organizations de-  
2 scribed in section 303(14).

3 “(E) SPECIFIC YEARS.—

4 “(i) IN GENERAL.—Targets for spe-  
5 cific years shall be established and revised  
6 by the Secretary through rulemaking and  
7 coordinated with code and standards devel-  
8 opers (such as the entities described in sec-  
9 tion 303(14)) at a level that—

10 “(I) is at the maximum level of  
11 energy efficiency that is techno-  
12 logically feasible and lifecycle cost ef-  
13 fective, while accounting for the eco-  
14 nomic considerations under paragraph  
15 (4);

16 “(II) is higher than the preceding  
17 target;

18 “(III) promotes the achievement  
19 of commercial and residential high-  
20 performance buildings (as defined in  
21 section 401 of the Energy Independ-  
22 ence and Security Act of 2007 (42  
23 U.S.C. 17061)) through high perform-  
24 ance energy efficiency; and



1                   “(IV) takes into consideration  
2                   the variations in climate zones used in  
3                   model building energy codes.

4                   “(ii) INITIAL TARGETS.—Not later  
5                   than 1 year after the date of enactment of  
6                   this clause, the Secretary shall establish  
7                   initial targets under this subparagraph.

8                   “(iii) DIFFERENT TARGET YEARS.—  
9                   Subject to clause (i), prior to the applica-  
10                  ble year, the Secretary may set a later tar-  
11                  get year for any of the model building en-  
12                  ergy codes described in subparagraph (A)  
13                  if the Secretary determines that a target  
14                  cannot be met.

15                  “(iv) SMALL BUSINESS.—When estab-  
16                  lishing targets under this paragraph  
17                  through rulemaking, the Secretary shall  
18                  ensure compliance with the Small Business  
19                  Regulatory Enforcement Fairness Act of  
20                  1996 (5 U.S.C. 601 note; Public Law 104–  
21                  121).

22                  “(3) APPLIANCE STANDARDS AND OTHER FAC-  
23                  TORS AFFECTING BUILDING ENERGY USE.—In es-  
24                  tablishing building code targets under paragraph  
25                  (2), the Secretary shall develop and adjust the tar-

1 gets in recognition of potential savings and costs re-  
2 lating to—

3 “(A) efficiency gains made in appliances,  
4 lighting, windows, insulation, and building enve-  
5 lope sealing;

6 “(B) advancement of distributed genera-  
7 tion and on-site renewable power generation  
8 technologies;

9 “(C) equipment improvements for heating,  
10 cooling, and ventilation systems;

11 “(D) building management systems and  
12 smart technologies to reduce energy use; and

13 “(E) other technologies, practices, and  
14 building systems that the Secretary considers  
15 appropriate regarding building plug load and  
16 other energy uses.

17 “(4) ECONOMIC CONSIDERATIONS.—In estab-  
18 lishing and revising building code targets under  
19 paragraph (2), the Secretary shall consider the eco-  
20 nomic feasibility of achieving the proposed targets  
21 established under this section and the potential costs  
22 and savings for consumers and building owners, in-  
23 cluding a return on investment analysis.

1       “(c) TECHNICAL ASSISTANCE TO MODEL BUILDING  
2 ENERGY CODE-SETTING AND STANDARDS DEVELOPMENT  
3 ORGANIZATIONS.—

4           “(1) IN GENERAL.—The Secretary shall, on a  
5 timely basis, provide technical assistance to model  
6 building energy code-setting and standards develop-  
7 ment organizations consistent with the goals of this  
8 section.

9           “(2) ASSISTANCE.—The assistance shall in-  
10 clude, as requested by the organizations, technical  
11 assistance in—

12           “(A) evaluating code or standards pro-  
13 posals or revisions;

14           “(B) building energy and water analysis  
15 and design tools;

16           “(C) building demonstrations;

17           “(D) developing definitions of energy use  
18 intensity and building types for use in model  
19 building energy codes to evaluate the efficiency  
20 impacts of the model building energy codes;

21           “(E) performance-based standards;

22           “(F) evaluating economic considerations  
23 under subsection (b)(4); and

1           “(G) developing model building energy  
2           codes by Indian tribes in accordance with tribal  
3           law.

4           “(3) AMENDMENT PROPOSALS.—The Secretary  
5           may submit timely model building energy code  
6           amendment proposals to the model building energy  
7           code-setting and standards development organiza-  
8           tions, with supporting evidence, sufficient to enable  
9           the model building energy codes to meet the targets  
10          established under subsection (b)(2).

11          “(4) ANALYSIS METHODOLOGY.—The Secretary  
12          shall make publicly available the entire calculation  
13          methodology (including input assumptions and data)  
14          used by the Secretary to estimate the energy savings  
15          of code or standard proposals and revisions.

16          “(d) DETERMINATION.—

17               “(1) REVISION OF MODEL BUILDING ENERGY  
18               CODES.—If the provisions of the IECC or ASHRAE  
19               Standard 90.1 regarding building energy use are  
20               proposed to be revised, the Secretary shall make a  
21               preliminary determination, by not later than 90 days  
22               after the date of receipt of the proposed revision,  
23               and a final determination by not later than 15  
24               months after the date of publication of the revision,  
25               regarding whether the revision will—

1           “(A) improve energy efficiency in build-  
2           ings, as compared to the existing model build-  
3           ing energy code; and

4           “(B) meet the applicable targets under  
5           subsection (b)(2).

6           “(2) CODES OR STANDARDS NOT MEETING TAR-  
7           GETS.—

8           “(A) PRELIMINARY DETERMINATION BY  
9           SECRETARY.—If the Secretary makes a prelimi-  
10          nary determination under paragraph (1)(B)  
11          that a code or standard does not meet an appli-  
12          cable target under subsection (b)(2), the Sec-  
13          retary shall contemporaneously provide to the  
14          developer of the model building energy code or  
15          standard not fewer than 2 proposed changes  
16          that would result in a model building energy  
17          code that meets the applicable target, together  
18          with supporting evidence, taking into consider-  
19          ation—

20               “(i) whether the modified code is tech-  
21               nically feasible and lifecycle cost effective;

22               “(ii) available appliances, technologies,  
23               materials, and construction practices; and

24               “(iii) the economic considerations  
25               under subsection (b)(4).

1           “(B) DETERMINATION OR ELECTION BY  
2           DEVELOPER.—Not later than 270 days after  
3           the date of receipt of proposed changes of the  
4           Secretary under subparagraph (A), a developer  
5           shall—

6                   “(i) determine whether—

7                           “(I) to publish a new revised  
8                           code accepting the proposed changes;  
9                           or

10                          “(II) to reject the proposed  
11                          changes; or

12                          “(ii) if the developer elects not to  
13                          make a determination under clause (i),  
14                          publish a notice of that election, together  
15                          with the proposed changes.

16           “(C) FINAL DETERMINATION BY SEC-  
17           RETARY.—

18                          “(i) IN GENERAL.—A final determina-  
19                          tion by the Secretary shall be made on the  
20                          model building energy code or standard, as  
21                          modified by the changes proposed by the  
22                          Secretary under subparagraph (A).

23                          “(ii) ADDITIONAL DETERMINA-  
24                          TIONS.—If a model building energy code or  
25                          standards developer makes an election pur-

1           suant to subparagraph (B)(ii), the Sec-  
2           retary shall make the following final deter-  
3           minations for purposes of this subsection:

4                   “(I) A final determination re-  
5                   garding whether the code or standard  
6                   of the developer, absent any changes  
7                   proposed by the Secretary under sub-  
8                   paragraph (A), will—

9                           “(aa) improve energy effi-  
10                           ciency in buildings, as compared  
11                           to the existing model building en-  
12                           ergy code; and

13                           “(bb) meet the applicable  
14                           targets under subsection (b)(2).

15                   “(II) A final determination re-  
16                   garding whether the code or standard  
17                   of the developer, as modified by the  
18                   changes proposed by the Secretary  
19                   under subparagraph (A), would—

20                           “(aa) improve energy effi-  
21                           ciency in buildings, as compared  
22                           to the existing model building en-  
23                           ergy code; and

24                           “(bb) meet the applicable  
25                           targets under subsection (b)(2).

1 “(e) ADMINISTRATION.—In carrying out this section,  
2 the Secretary shall—

3 “(1) publish notice of targets and supporting  
4 analysis and determinations under this section in the  
5 Federal Register to provide an explanation of and  
6 the basis for such actions, including any supporting  
7 modeling, data, assumptions, protocols, and cost-  
8 benefit analysis, including return on investment; and

9 “(2) provide an opportunity for public comment  
10 on targets and supporting analysis and determina-  
11 tions under this section.”.

12 (2) CONFORMING AMENDMENT.—The table of  
13 contents for the Energy Conservation and Produc-  
14 tion Act is amended by amending the item relating  
15 to section 307 to read as follows:

“Sec. 307. Support for model building energy codes.”.

16 **SEC. 1102. COST-EFFECTIVE CODES IMPLEMENTATION FOR**  
17 **EFFICIENCY AND RESILIENCE.**

18 (a) IN GENERAL.—Title III of the Energy Conserva-  
19 tion and Production Act (42 U.S.C. 6831 et seq.) is  
20 amended by adding at the end the following:

21 **“SEC. 309. COST-EFFECTIVE CODES IMPLEMENTATION FOR**  
22 **EFFICIENCY AND RESILIENCE.**

23 “(a) DEFINITIONS.—In this section:

24 “(1) ELIGIBLE ENTITY.—The term ‘eligible en-  
25 tity’ means—



1 “(A) a relevant State agency, as deter-  
2 mined by the Secretary, such as a State build-  
3 ing code agency or State energy office; and

4 “(B) a partnership.

5 “(2) PARTNERSHIP.—The term ‘partnership’  
6 means a partnership between an eligible entity de-  
7 scribed in paragraph (1)(A) and 1 or more of the  
8 following entities:

9 “(A) Local building code agencies.

10 “(B) Codes and standards developers.

11 “(C) Associations of builders and design  
12 and construction professionals.

13 “(D) Local and utility energy efficiency  
14 programs.

15 “(E) Consumer, energy efficiency, and en-  
16 vironmental advocates.

17 “(F) Other entities, as determined by the  
18 Secretary.

19 “(3) SECRETARY.—The term ‘Secretary’ means  
20 the Secretary of Energy.

21 “(b) ESTABLISHMENT.—

22 “(1) IN GENERAL.—The Secretary shall estab-  
23 lish within the Building Technologies Office of the  
24 Department of Energy a program under which the  
25 Secretary shall award grants on a competitive basis

1 to eligible entities to enable sustained cost-effective  
2 implementation of updated building energy codes.

3 “(2) UPDATED BUILDING ENERGY CODE.—An  
4 update to a building energy code under this section  
5 shall include any update made available after the ex-  
6 isting building energy code, even if it is not the most  
7 recent updated code available.

8 “(c) CRITERIA; PRIORITY.—In awarding grants  
9 under subsection (b), the Secretary shall—

10 “(1) consider—

11 “(A) prospective energy savings and plans  
12 to measure the savings;

13 “(B) the long-term sustainability of those  
14 measures and savings;

15 “(C) prospective benefits, and plans to as-  
16 sess the benefits, including benefits relating  
17 to—

18 “(i) resilience and peak load reduc-  
19 tion;

20 “(ii) occupant safety and health; and

21 “(iii) environmental performance;

22 “(D) the demonstrated capacity of the eli-  
23 gible entity to carry out the proposed project;  
24 and

1                   “(E) the need of the eligible entity for as-  
2                   sistance; and

3                   “(2) give priority to applications from partner-  
4                   ships.

5                   “(d) ELIGIBLE ACTIVITIES.—

6                   “(1) IN GENERAL.—An eligible entity awarded  
7                   a grant under this section may use the grant  
8                   funds—

9                   “(A) to create or enable State or regional  
10                  partnerships to provide training and materials  
11                  to—

12                  “(i) builders, contractors and sub-  
13                  contractors, architects, and other design  
14                  and construction professionals, relating to  
15                  meeting updated building energy codes in a  
16                  cost-effective manner; and

17                  “(ii) building code officials, relating to  
18                  improving implementation of and compli-  
19                  ance with building energy codes;

20                  “(B) to collect and disseminate quan-  
21                  titative data on construction and codes imple-  
22                  mentation, including code pathways, perform-  
23                  ance metrics, and technologies used;

1 “(C) to develop and implement a plan for  
2 highly effective codes implementation, including  
3 measuring compliance;

4 “(D) to address various implementation  
5 needs in rural, suburban, and urban areas; and

6 “(E) to implement updates in energy codes  
7 for—

8 “(i) new residential and commercial  
9 buildings (including multifamily buildings);  
10 and

11 “(ii) additions and alterations to ex-  
12 isting residential and commercial buildings  
13 (including multifamily buildings).

14 “(2) RELATED TOPICS.—Training and mate-  
15 rials provided using a grant under this section may  
16 include information on the relationship between en-  
17 ergy codes and—

18 “(A) cost-effective, high-performance, and  
19 zero-net-energy buildings;

20 “(B) improving resilience, health, and safe-  
21 ty;

22 “(C) water savings and other environ-  
23 mental impacts; and

24 “(D) the economic impacts of energy  
25 codes.

1 “(e) AUTHORIZATION OF APPROPRIATIONS.—There  
2 are authorized to be appropriated to the Secretary to carry  
3 out this section—

4 “(1) \$25,000,000 for each of fiscal years 2021  
5 through 2030; and

6 “(2) for fiscal year 2031 and each fiscal year  
7 thereafter, such sums as are necessary.”.

8 (b) CONFORMING AMENDMENTS.—

9 (1) TABLE OF CONTENTS.—The table of con-  
10 tents for the Energy Conservation and Production  
11 Act is amended by inserting after the item relating  
12 to section 308 the following:

“Sec. 309. Cost-effective codes implementation for efficiency and resilience.”.

13 (2) DEFINITIONS.—Section 303 of the Energy  
14 Conservation and Production Act (42 U.S.C. 6832)  
15 is amended, in the matter preceding paragraph (1),  
16 by striking “As used in” and inserting “Except as  
17 otherwise provided, in”.

18 **SEC. 1103. COMMERCIAL BUILDING ENERGY CONSUMPTION**  
19 **INFORMATION SHARING.**

20 (a) IN GENERAL.—Not later than 120 days after the  
21 date of enactment of this Act, the Administrator of the  
22 Energy Information Administration (referred to in this  
23 section as the “Administrator”) and the Administrator of  
24 the Environmental Protection Agency shall sign, and sub-  
25 mit to Congress, an information sharing agreement (re-

1 ferred to in this section as the “agreement”) relating to  
2 commercial building energy consumption data.

3 (b) CONTENT OF AGREEMENT.—The agreement  
4 shall—

5 (1) provide that the Administrator shall have  
6 access to building-specific data in the Portfolio Man-  
7 ager database of the Environmental Protection  
8 Agency;

9 (2) describe the manner in which the Adminis-  
10 trator shall incorporate appropriate data (including  
11 the data described in subsection (c)) into any Com-  
12 mercial Buildings Energy Consumption Survey (re-  
13 ferred to in this section as “CBECS”) published  
14 after the date of enactment of this Act for the pur-  
15 pose of analyzing and estimating building popu-  
16 lation, size, location, activity, energy usage, and any  
17 other relevant building characteristic; and

18 (3) describe and compare—

19 (A) the methodologies that the Energy In-  
20 formation Administration, the Environmental  
21 Protection Agency, and State and local govern-  
22 ment managers use to maximize the quality, re-  
23 liability, and integrity of data collected through  
24 CBECS, the Portfolio Manager database of the  
25 Environmental Protection Agency, and State

1 and local building energy disclosure laws (in-  
2 cluding regulations), respectively, and the man-  
3 ner in which those methodologies can be im-  
4 proved; and

5 (B) consistencies and variations in data for  
6 buildings that were captured in the 2012  
7 CBECS cycle and in the Portfolio Manager  
8 database of the Environmental Protection  
9 Agency.

10 (c) DATA.—The data referred in subsection (b)(2) in-  
11 cludes data that—

12 (1) is collected through the Portfolio Manager  
13 database of the Environmental Protection Agency;

14 (2) is required to be publicly available on the  
15 internet under State and local government building  
16 energy disclosure laws (including regulations); and

17 (3) includes information on private sector build-  
18 ings that are not less than 250,000 square feet.

19 (d) PROTECTION OF INFORMATION.—In carrying out  
20 the agreement, the Administrator and the Administrator  
21 of the Environmental Protection Agency shall protect in-  
22 formation in accordance with—

23 (1) section 552(b)(4) of title 5, United States  
24 Code (commonly known as the ‘Freedom of Informa-  
25 tion Act’);

1           (2) subchapter III of chapter 35 of title 44,  
2       United States Code; and

3           (3) any other applicable law (including regula-  
4       tions).

5       **PART 2—WORKER TRAINING AND CAPACITY**  
6                           **BUILDING**

7       **SEC. 1111. BUILDING TRAINING AND ASSESSMENT CEN-**  
8                           **TERS.**

9       (a) IN GENERAL.—The Secretary of Energy shall  
10     provide grants to institutions of higher education (as de-  
11     fined in section 101 of the Higher Education Act of 1965  
12     (20 U.S.C. 1001)) and Tribal Colleges or Universities (as  
13     defined in section 316(b) of that Act (20 U.S.C.  
14     1059c(b))) to establish building training and assessment  
15     centers—

16           (1) to identify opportunities for optimizing en-  
17     ergy efficiency and environmental performance in  
18     buildings;

19           (2) to promote the application of emerging con-  
20     cepts and technologies in commercial and institu-  
21     tional buildings;

22           (3) to train engineers, architects, building sci-  
23     entists, building energy permitting and enforcement  
24     officials, and building technicians in energy-efficient  
25     design and operation;



1 (4) to assist institutions of higher education  
2 and Tribal Colleges or Universities in training build-  
3 ing technicians;

4 (5) to promote research and development for  
5 the use of alternative energy sources and distributed  
6 generation to supply heat and power for buildings,  
7 particularly energy-intensive buildings; and

8 (6) to coordinate with and assist State-accred-  
9 ited technical training centers, community colleges,  
10 Tribal Colleges or Universities, and local offices of  
11 the National Institute of Food and Agriculture and  
12 ensure appropriate services are provided under this  
13 section to each region of the United States.

14 (b) COORDINATION AND NONDUPLICATION.—

15 (1) IN GENERAL.—The Secretary of Energy  
16 shall coordinate the program with the industrial re-  
17 search and assessment centers program and with  
18 other Federal programs to avoid duplication of ef-  
19 fort.

20 (2) COLLOCATION.—To the maximum extent  
21 practicable, building, training, and assessment cen-  
22 ters established under this section shall be collocated  
23 with Industrial Assessment Centers.

1 (c) AUTHORIZATION OF APPROPRIATIONS.—There is  
2 authorized to be appropriated to carry out this section  
3 \$10,000,000, to remain available until expended.

4 **SEC. 1112. CAREER SKILLS TRAINING.**

5 (a) DEFINITION OF ELIGIBLE ENTITY.—In this sec-  
6 tion, the term “eligible entity” means a nonprofit partner-  
7 ship that—

8 (1) includes the equal participation of industry,  
9 including public or private employers, and labor or-  
10 ganizations, including joint labor-management train-  
11 ing programs;

12 (2) may include workforce investment boards,  
13 community-based organizations, qualified service and  
14 conservation corps, educational institutions, small  
15 businesses, cooperatives, State and local veterans  
16 agencies, and veterans service organizations; and

17 (3) demonstrates—

18 (A) experience in implementing and oper-  
19 ating worker skills training and education pro-  
20 grams;

21 (B) the ability to identify and involve in  
22 training programs carried out under this sec-  
23 tion, target populations of individuals who  
24 would benefit from training and be actively in-

1           volved in activities relating to energy efficiency  
2           and renewable energy industries; and

3           (C) the ability to help individuals achieve  
4           economic self-sufficiency.

5       (b) ESTABLISHMENT.—The Secretary of Energy  
6 shall award grants to eligible entities to pay the Federal  
7 share of associated career skills training programs under  
8 which students concurrently receive classroom instruction  
9 and on-the-job training for the purpose of obtaining an  
10 industry-related certification to install energy efficient  
11 buildings technologies, including technologies described in  
12 subsection (b)(3) of section 307 of the Energy Conserva-  
13 tion and Production Act (42 U.S.C. 6836).

14       (c) FEDERAL SHARE.—The Federal share of the cost  
15 of carrying out a career skills training program described  
16 in subsection (a) shall be 50 percent.

17       (d) AUTHORIZATION OF APPROPRIATIONS.—There is  
18 authorized to be appropriated to carry out this section  
19 \$10,000,000, to remain available until expended.

## 20                   **PART 3—SCHOOL BUILDINGS**

### 21   **SEC. 1121. COORDINATION OF ENERGY RETROFITTING AS-** 22                   **SISTANCE FOR SCHOOLS.**

23       Section 392 of the Energy Policy and Conservation  
24 Act (42 U.S.C. 6371a) is amended by adding at the end  
25 the following:

1       “(e) COORDINATION OF ENERGY RETROFITTING AS-  
2       SISTANCE FOR SCHOOLS.—

3               “(1) DEFINITION OF SCHOOL.—Notwith-  
4       standing section 391(6), for the purposes of this  
5       subsection, the term ‘school’ means—

6               “(A) an elementary school or secondary  
7       school (as defined in section 9101 of the Ele-  
8       mentary and Secondary Education Act of 1965  
9       (20 U.S.C. 7801));

10              “(B) an institution of higher education (as  
11       defined in section 102(a) of the Higher Edu-  
12       cation Act of 1965 (20 U.S.C. 1002(a)));

13              “(C) a school of the defense dependents’  
14       education system under the Defense Depend-  
15       ents’ Education Act of 1978 (20 U.S.C. 921 et  
16       seq.) or established under section 2164 of title  
17       10, United States Code;

18              “(D) a school operated by the Bureau of  
19       Indian Affairs;

20              “(E) a tribally controlled school (as de-  
21       fined in section 5212 of the Tribally Controlled  
22       Schools Act of 1988 (25 U.S.C. 2511)); and

23              “(F) a Tribal College or University (as de-  
24       fined in section 316(b) of the Higher Education  
25       Act of 1965 (20 U.S.C. 1059c(b))).

1           “(2) ESTABLISHMENT OF CLEARINGHOUSE.—

2           The Secretary, acting through the Office of Energy  
3           Efficiency and Renewable Energy, shall establish a  
4           clearinghouse to disseminate information regarding  
5           available Federal programs and financing mecha-  
6           nisms that may be used to help initiate, develop, and  
7           finance energy efficiency, distributed generation, and  
8           energy retrofitting projects for schools.

9           “(3) REQUIREMENTS.—In carrying out para-  
10          graph (2), the Secretary shall—

11           “(A) consult with appropriate Federal  
12           agencies to develop a list of Federal programs  
13           and financing mechanisms that are, or may be,  
14           used for the purposes described in paragraph  
15           (2); and

16           “(B) coordinate with appropriate Federal  
17           agencies to develop a collaborative education  
18           and outreach effort to streamline communica-  
19           tions and promote available Federal programs  
20           and financing mechanisms described in sub-  
21           paragraph (A), which may include the develop-  
22           ment and maintenance of a single online re-  
23           source that includes contact information for rel-  
24           evant technical assistance in the Office of En-  
25           ergy Efficiency and Renewable Energy that

1 States, local education agencies, and schools  
2 may use to effectively access and use such Fed-  
3 eral programs and financing mechanisms.”.

4 **Subtitle B—Industrial Efficiency**  
5 **and Competitiveness**

6 **PART 1—MANUFACTURING ENERGY EFFICIENCY**

7 **SEC. 1201. PURPOSES.**

8 The purposes of this part are—

9 (1) to establish a clear and consistent authority  
10 for industrial efficiency programs of the Department  
11 of Energy;

12 (2) to accelerate the deployment of technologies  
13 and practices that will increase industrial energy ef-  
14 ficiency and improve productivity;

15 (3) to accelerate the development and dem-  
16 onstration of technologies that will assist the deploy-  
17 ment goals of the industrial efficiency programs of  
18 the Department of Energy and increase manufac-  
19 turing efficiency;

20 (4) to stimulate domestic economic growth and  
21 improve industrial productivity and competitiveness;

22 (5) to meet the future workforce needs of in-  
23 dustry; and

1 (6) to strengthen partnerships between Federal  
2 and State governmental agencies and the private  
3 and academic sectors.

4 **SEC. 1202. FUTURE OF INDUSTRY PROGRAM AND INDUS-**  
5 **TRIAL RESEARCH AND ASSESSMENT CEN-**  
6 **TERS.**

7 (a) FUTURE OF INDUSTRY PROGRAM.—Section 452  
8 of the Energy Independence and Security Act of 2007 (42  
9 U.S.C. 17111) is amended—

10 (1) by striking the section heading and insert-  
11 ing the following: “**FUTURE OF INDUSTRY PRO-**  
12 **GRAM**”;

13 (2) in subsection (a)(2)—

14 (A) by redesignating subparagraph (E) as  
15 subparagraph (F); and

16 (B) by inserting after subparagraph (D)  
17 the following:

18 “(E) water and wastewater treatment fa-  
19 cilities, including systems that treat municipal,  
20 industrial, and agricultural waste; and”;

21 (3) by striking subsection (e); and

22 (4) by redesignating subsection (f) as sub-  
23 section (e).

24 (b) INDUSTRIAL RESEARCH AND ASSESSMENT CEN-  
25 TERS.—Subtitle D of title IV of the Energy Independence

1 and Security Act of 2007 (42 U.S.C. 17111 et seq.) is  
2 amended by adding at the end the following:

3 **“SEC. 454. INDUSTRIAL RESEARCH AND ASSESSMENT CEN-**  
4 **TERS.**

5 “(a) DEFINITIONS.—In this section:

6 “(1) ENERGY SERVICE PROVIDER.—The term  
7 ‘energy service provider’ means—

8 “(A) any business providing technology or  
9 services to improve the energy efficiency, water  
10 efficiency, power factor, or load management of  
11 a manufacturing site or other industrial process  
12 in an energy-intensive industry (as defined in  
13 section 452(a)); and

14 “(B) any utility operating under a utility  
15 energy service project.

16 “(2) INDUSTRIAL RESEARCH AND ASSESSMENT  
17 CENTER.—The term ‘industrial research and assess-  
18 ment center’ means—

19 “(A) an institution of higher education-  
20 based industrial research and assessment center  
21 that is funded by the Secretary under sub-  
22 section (b); and

23 “(B) an industrial research and assess-  
24 ment center at a trade school, community col-



1           lege, or union training program that is funded  
2           by the Secretary under subsection (f).

3           “(b) INSTITUTION OF HIGHER EDUCATION-BASED  
4 INDUSTRIAL RESEARCH AND ASSESSMENT CENTERS.—

5           “(1) IN GENERAL.—The Secretary shall provide  
6           funding to institution of higher education-based in-  
7           dustrial research and assessment centers.

8           “(2) PURPOSE.—The purpose of each institu-  
9           tion of higher education-based industrial research  
10          and assessment center shall be—

11           “(A) to identify opportunities for opti-  
12          mizing energy efficiency and environmental per-  
13          formance, including implementation of—

14                   “(i) smart manufacturing;

15                   “(ii) energy management systems;

16                   “(iii) sustainable manufacturing; and

17                   “(iv) information technology advance-  
18          ments for supply chain analysis, logistics,  
19          system monitoring, industrial and manu-  
20          facturing processes, and other purposes;

21           “(B) to promote applications of emerging  
22          concepts and technologies in small- and me-  
23          dium-sized manufacturers (including water and  
24          wastewater treatment facilities and federally  
25          owned manufacturing facilities);

1                   “(C) to promote research and development  
2                   for the use of alternative energy sources to sup-  
3                   ply heat, power, and new feedstocks for energy-  
4                   intensive industries;

5                   “(D) to coordinate with appropriate Fed-  
6                   eral and State research offices;

7                   “(E) to provide a clearinghouse for indus-  
8                   trial process and energy efficiency technical as-  
9                   sistance resources; and

10                  “(F) to coordinate with State-accredited  
11                  technical training centers and community col-  
12                  leges, while ensuring appropriate services to all  
13                  regions of the United States.

14                  “(c) COORDINATION.—To increase the value and ca-  
15                  pabilities of the industrial research and assessment cen-  
16                  ters, the centers shall—

17                  “(1) coordinate with Manufacturing Extension  
18                  Partnership Centers of the National Institute of  
19                  Standards and Technology;

20                  “(2) coordinate with the Federal Energy Man-  
21                  agement Program and the Building Technologies  
22                  Program of the Department of Energy to provide  
23                  building assessment services to manufacturers;

24                  “(3) increase partnerships with the National  
25                  Laboratories of the Department of Energy to lever-

1 age the expertise, technologies, and research and de-  
2 velopment capabilities of the National Laboratories  
3 for national industrial and manufacturing needs;

4 “(4) increase partnerships with energy service  
5 providers and technology providers to leverage pri-  
6 vate sector expertise and accelerate deployment of  
7 new and existing technologies and processes for en-  
8 ergy efficiency, power factor, and load management;

9 “(5) identify opportunities for reducing green-  
10 house gas emissions and other air emissions; and

11 “(6) promote sustainable manufacturing prac-  
12 tices for small- and medium-sized manufacturers.

13 “(d) OUTREACH.—The Secretary shall provide fund-  
14 ing for—

15 “(1) outreach activities by the industrial re-  
16 search and assessment centers to inform small- and  
17 medium-sized manufacturers of the information,  
18 technologies, and services available; and

19 “(2) coordination activities by each industrial  
20 research and assessment center to leverage efforts  
21 with—

22 “(A) Federal and State efforts;

23 “(B) the efforts of utilities and energy  
24 service providers;

1                   “(C) the efforts of regional energy effi-  
2                   ciency organizations; and

3                   “(D) the efforts of other industrial re-  
4                   search and assessment centers.

5                   “(e) CENTERS OF EXCELLENCE.—

6                   “(1) ESTABLISHMENT.—The Secretary shall es-  
7                   tablish a Center of Excellence at not more than 5  
8                   of the highest-performing industrial research and as-  
9                   sessment centers, as determined by the Secretary.

10                  “(2) DUTIES.—A Center of Excellence shall co-  
11                  ordinate with and advise the industrial research and  
12                  assessment centers located in the region of the Cen-  
13                  ter of Excellence, including—

14                  “(A) by mentoring new directors and staff  
15                  of the industrial research and assessment cen-  
16                  ters with respect to—

17                          “(i) the availability of resources; and

18                          “(ii) best practices for carrying out  
19                          assessments, including through the partici-  
20                          pation of the staff of the Center of Excel-  
21                          lence in assessments carried out by new in-  
22                          dustrial research and assessment centers;

23                  “(B) by providing training to staff and  
24                  students at the industrial research and assess-  
25                  ment centers on new technologies, practices,

1 and tools to expand the scope and impact of the  
2 assessments carried out by the centers;

3 “(C) by assisting the industrial research  
4 and assessment centers with specialized tech-  
5 nical opportunities, including by providing a  
6 clearinghouse of available expertise and tools to  
7 assist the centers and clients of the centers in  
8 assessing and implementing those opportunities;

9 “(D) by identifying and coordinating with  
10 regional, State, local, and utility energy effi-  
11 ciency programs for the purpose of facilitating  
12 efforts by industrial research and assessment  
13 centers to connect industrial facilities receiving  
14 assessments from those centers with regional,  
15 State, local, and utility energy efficiency pro-  
16 grams that could aid the industrial facilities in  
17 implementing any recommendations resulting  
18 from the assessments;

19 “(E) by facilitating coordination between  
20 the industrial research and assessment centers  
21 and other Federal programs described in para-  
22 graphs (1) through (3) of subsection (c); and

23 “(F) by coordinating the outreach activi-  
24 ties of the industrial research and assessment  
25 centers under subsection (d)(1).

1           “(3) FUNDING.—Subject to the availability of  
2           appropriations, for each fiscal year, out of any  
3           amounts made available to carry out this section  
4           under subsection (i), the Secretary shall use not less  
5           than \$500,000 to support each Center of Excellence.

6           “(f) EXPANSION OF INDUSTRIAL RESEARCH AND AS-  
7           SESSMENT CENTERS.—

8           “(1) IN GENERAL.—The Secretary shall provide  
9           funding to establish additional industrial research  
10          and assessment centers at trade schools, community  
11          colleges, and union training programs.

12          “(2) PURPOSE.—

13                 “(A) IN GENERAL.—Subject to subpara-  
14                 graph (B), to the maximum extent practicable,  
15                 an industrial research and assessment center  
16                 established under paragraph (1) shall have the  
17                 same purpose as an institution of higher edu-  
18                 cation-based industrial research center that is  
19                 funded by the Secretary under subsection  
20                 (b)(1).

21                 “(B) CONSIDERATION OF CAPABILITIES.—

22                 In evaluating or establishing the purpose of an  
23                 industrial research and assessment center es-  
24                 tablished under paragraph (1), the Secretary  
25                 shall take into consideration the varying capa-

1           bilities of trade schools, community colleges,  
2           and union training programs.

3           “(g) WORKFORCE TRAINING.—

4           “(1) INTERNSHIPS.—The Secretary shall pay  
5           the Federal share of associated internship programs  
6           under which students work with or for industries,  
7           manufacturers, and energy service providers to im-  
8           plement the recommendations of industrial research  
9           and assessment centers.

10          “(2) APPRENTICESHIPS.—The Secretary shall  
11          pay the Federal share of associated apprenticeship  
12          programs under which—

13               “(A) students work with or for industries,  
14               manufacturers, and energy service providers to  
15               implement the recommendations of industrial  
16               research and assessment centers; and

17               “(B) employees of facilities that have re-  
18               ceived an assessment from an industrial re-  
19               search and assessment center work with or for  
20               an industrial research and assessment center to  
21               gain knowledge on engineering practices and  
22               processes to improve productivity and energy  
23               savings.

24          “(3) FEDERAL SHARE.—The Federal share of  
25          the cost of carrying out internship programs de-

1 scribed in paragraph (1) and apprenticeship pro-  
2 grams described in paragraph (2) shall be 50 per-  
3 cent.

4 “(h) SMALL BUSINESS LOANS.—The Administrator  
5 of the Small Business Administration shall, to the max-  
6 imum extent practicable, expedite consideration of applica-  
7 tions from eligible small business concerns for loans under  
8 the Small Business Act (15 U.S.C. 631 et seq.) to imple-  
9 ment recommendations developed by the industrial re-  
10 search and assessment centers.

11 “(i) FUNDING.—There is authorized to be appro-  
12 priated to the Secretary to carry out this section  
13 \$30,000,000 for each fiscal year, to remain available until  
14 expended.”.

15 (c) CLERICAL AMENDMENT.—The table of contents  
16 of the Energy Independence and Security Act of 2007 (42  
17 U.S.C. prec. 17001) is amended by adding at the end of  
18 the items relating to subtitle D of title IV the following:

“Sec. 454. Industrial research and assessment centers.”.

19 **SEC. 1203. SUSTAINABLE MANUFACTURING INITIATIVE.**

20 (a) IN GENERAL.—Part E of title III of the Energy  
21 Policy and Conservation Act (42 U.S.C. 6341 et seq.) is  
22 amended by adding at the end the following:

23 **“SEC. 376. SUSTAINABLE MANUFACTURING INITIATIVE.**

24 “(a) IN GENERAL.—As part of the Office of Energy  
25 Efficiency and Renewable Energy of the Department of



1 Energy, the Secretary, on the request of a manufacturer,  
2 shall carry out onsite technical assessments to identify op-  
3 portunities for—

4 “(1) maximizing the energy efficiency of indus-  
5 trial processes and cross-cutting systems;

6 “(2) preventing pollution and minimizing waste;

7 “(3) improving efficient use of water in manu-  
8 facturing processes;

9 “(4) conserving natural resources; and

10 “(5) achieving such other goals as the Secretary  
11 determines to be appropriate.

12 “(b) COORDINATION.—To implement any rec-  
13 ommendations resulting from an onsite technical assess-  
14 ment carried out under subsection (a) and to accelerate  
15 the adoption of new and existing technologies and proc-  
16 esses that improve energy efficiency, the Secretary shall  
17 coordinate with—

18 “(1) the Advanced Manufacturing Office of the  
19 Department of Energy;

20 “(2) the Building Technologies Office of the  
21 Department of Energy;

22 “(3) the Federal Energy Management Program  
23 of the Department of Energy; and

1           “(4) the private sector and other appropriate  
2           agencies, including the National Institute of Stand-  
3           ards and Technology.

4           “(c) RESEARCH AND DEVELOPMENT PROGRAM FOR  
5           SUSTAINABLE MANUFACTURING AND INDUSTRIAL TECH-  
6           NOLOGIES AND PROCESSES.—As part of the industrial ef-  
7           ficiency programs of the Department of Energy, the Sec-  
8           retary shall carry out a joint industry-government partner-  
9           ship program to research, develop, and demonstrate new  
10          sustainable manufacturing and industrial technologies and  
11          processes that maximize the energy efficiency of industrial  
12          plants, reduce pollution, and conserve natural resources.”.

13          (b) CLERICAL AMENDMENT.—The table of contents  
14          of the Energy Policy and Conservation Act (42 U.S.C.  
15          prec. 6201) is amended by adding at the end of the items  
16          relating to part E of title III the following:

          “Sec. 376. Sustainable manufacturing initiative.”.

17       **SEC. 1204. CONFORMING AMENDMENTS.**

18          (a) Section 106 of the Energy Policy Act of 2005 (42  
19          U.S.C. 15811) and the item relating to such section in  
20          the table of contents of such Act are repealed.

21          (b) Sections 131, 132, 133, 2103, and 2107 of the  
22          Energy Policy Act of 1992 (42 U.S.C. 6348, 6349, 6350,  
23          13453, 13456) and the items relating to such section in  
24          the table of contents of such Act are repealed.

1 (c) Section 2101(a) of the Energy Policy Act of 1992  
2 (42 U.S.C. 13451(a)) is amended in the third sentence  
3 by striking “sections 2102, 2103, 2104, 2105, 2106,  
4 2107, and 2108” and inserting “sections 2102, 2104,  
5 2105, 2106, and 2108 of this Act and section 376 of the  
6 Energy Policy and Conservation Act,”.

7 **PART 2—EXTENDED PRODUCT SYSTEM REBATE**  
8 **PROGRAM**

9 **SEC. 1211. EXTENDED PRODUCT SYSTEM REBATE PRO-**  
10 **GRAM.**

11 (a) DEFINITIONS.—In this section:

12 (1) ELECTRIC MOTOR.—The term “electric  
13 motor” has the meaning given the term in section  
14 431.12 of title 10, Code of Federal Regulations (as  
15 in effect on the date of enactment of this Act).

16 (2) ELECTRONIC CONTROL.—The term “elec-  
17 tronic control” means—

18 (A) a power converter; or

19 (B) a combination of a power circuit and  
20 control circuit included on 1 chassis.

21 (3) EXTENDED PRODUCT SYSTEM.—The term  
22 “extended product system” means an electric motor  
23 and any required associated electronic control and  
24 driven load that—

1 (A) offers variable speed or multispeed op-  
2 eration;

3 (B) offers partial load control that reduces  
4 input energy requirements (as measured in kilo-  
5 watt-hours) as compared to identified base lev-  
6 els set by the Secretary of Energy; and

7 (C)(i) has greater than 1 horsepower; and

8 (ii) uses an extended product system tech-  
9 nology, as determined by the Secretary of En-  
10 ergy.

11 (4) QUALIFIED EXTENDED PRODUCT SYS-  
12 TEM.—

13 (A) IN GENERAL.—The term “qualified ex-  
14 tended product system” means an extended  
15 product system that—

16 (i) includes an electric motor and an  
17 electronic control; and

18 (ii) reduces the input energy (as  
19 measured in kilowatt-hours) required to  
20 operate the extended product system by  
21 not less than 5 percent, as compared to  
22 identified base levels set by the Secretary  
23 of Energy.

1 (B) INCLUSIONS.—The term “qualified ex-  
2 tended product system” includes commercial or  
3 industrial machinery or equipment that—

4 (i)(I) did not previously make use of  
5 the extended product system prior to the  
6 redesign described in subclause (II); and

7 (II) incorporates an extended product  
8 system that has greater than 1 horsepower  
9 into redesigned machinery or equipment;  
10 and

11 (ii) was previously used prior to, and  
12 was placed back into service during, cal-  
13 endar year 2021 or 2022.

14 (b) ESTABLISHMENT.—Not later than 180 days after  
15 the date of enactment of this Act, the Secretary of Energy  
16 shall establish a program to provide rebates for expendi-  
17 tures made by qualified entities for the purchase or instal-  
18 lation of a qualified extended product system.

19 (c) QUALIFIED ENTITIES.—

20 (1) ELIGIBILITY REQUIREMENTS.—A qualified  
21 entity under this section shall be—

22 (A) in the case of a qualified extended  
23 product system described in subsection  
24 (a)(4)(A), the purchaser of the qualified ex-  
25 tended product that is installed; and

1 (B) in the case of a qualified extended  
2 product system described in subsection  
3 (a)(4)(B), the manufacturer of the commercial  
4 or industrial machinery or equipment that in-  
5 corporated the extended product system into  
6 that machinery or equipment.

7 (2) APPLICATION.—To be eligible to receive a  
8 rebate under this section, a qualified entity shall  
9 submit to the Secretary of Energy—

10 (A) an application in such form, at such  
11 time, and containing such information as the  
12 Secretary of Energy may require; and

13 (B) a certification that includes dem-  
14 onstrated evidence—

15 (i) that the entity is a qualified entity;

16 and

17 (ii)(I) in the case of a qualified entity  
18 described in paragraph (1)(A)—

19 (aa) that the qualified entity in-  
20 stalled the qualified extended product  
21 system during the 2 fiscal years fol-  
22 lowing the date of enactment of this  
23 Act;

1 (bb) that the qualified extended  
2 product system meets the require-  
3 ments of subsection (a)(4)(A); and

4 (cc) showing the serial number,  
5 manufacturer, and model number  
6 from the nameplate of the installed  
7 motor of the qualified entity on which  
8 the qualified extended product system  
9 was installed; or

10 (II) in the case of a qualified entity  
11 described in paragraph (1)(B), dem-  
12 onstrated evidence—

13 (aa) that the qualified extended  
14 product system meets the require-  
15 ments of subsection (a)(4)(B); and

16 (bb) showing the serial number,  
17 manufacturer, and model number  
18 from the nameplate of the installed  
19 motor of the qualified entity with  
20 which the extended product system is  
21 integrated.

22 (d) AUTHORIZED AMOUNT OF REBATE.—

23 (1) IN GENERAL.—The Secretary of Energy  
24 may provide to a qualified entity a rebate in an

1 amount equal to the product obtained by multi-  
2 plying—

3 (A) an amount equal to the sum of the  
4 nameplate rated horsepower of—

5 (i) the electric motor to which the  
6 qualified extended product system is at-  
7 tached; and

8 (ii) the electronic control; and

9 (B) \$25.

10 (2) MAXIMUM AGGREGATE AMOUNT.—A quali-  
11 fied entity shall not be entitled to aggregate rebates  
12 under this section in excess of \$25,000 per calendar  
13 year.

14 (e) AUTHORIZATION OF APPROPRIATIONS.—There is  
15 authorized to be appropriated to carry out this section  
16 \$5,000,000 for each of the first 2 full fiscal years following  
17 the date of enactment of this Act, to remain available until  
18 expended.

### 19 **PART 3—TRANSFORMER REBATE PROGRAM**

#### 20 **SEC. 1221. ENERGY EFFICIENT TRANSFORMER REBATE** 21 **PROGRAM.**

22 (a) DEFINITIONS.—In this section:

23 (1) QUALIFIED ENERGY EFFICIENT TRANS-  
24 FORMER.—The term “qualified energy efficient  
25 transformer” means a transformer that meets or ex-



1 ceeds the applicable energy conservation standards  
2 described in the tables in subsection (b)(2) and  
3 paragraphs (1) and (2) of subsection (c) of section  
4 431.196 of title 10, Code of Federal Regulations (as  
5 in effect on the date of enactment of this Act).

6 (2) QUALIFIED ENERGY INEFFICIENT TRANS-  
7 FORMER.—The term “qualified energy inefficient  
8 transformer” means a transformer with an equal  
9 number of phases and capacity to a transformer de-  
10 scribed in any of the tables in subsection (b)(2) and  
11 paragraphs (1) and (2) of subsection (c) of section  
12 431.196 of title 10, Code of Federal Regulations (as  
13 in effect on the date of enactment of this Act)  
14 that—

15 (A) does not meet or exceed the applicable  
16 energy conservation standards described in  
17 paragraph (1); and

18 (B)(i) was manufactured between January  
19 1, 1987, and December 31, 2008, for a trans-  
20 former with an equal number of phases and ca-  
21 pacity as a transformer described in the table  
22 in subsection (b)(2) of section 431.196 of title  
23 10, Code of Federal Regulations (as in effect on  
24 the date of enactment of this Act); or

1 (ii) was manufactured between January 1,  
2 1992, and December 31, 2011, for a trans-  
3 former with an equal number of phases and ca-  
4 pacity as a transformer described in the table  
5 in paragraph (1) or (2) of subsection (c) of that  
6 section (as in effect on the date of enactment  
7 of this Act).

8 (3) QUALIFIED ENTITY.—The term “qualified  
9 entity” means an owner of industrial or manufac-  
10 turing facilities, commercial buildings, or multifamily  
11 residential buildings, a utility, or an energy service  
12 company that fulfills the requirements of subsection  
13 (d).

14 (b) ESTABLISHMENT.—Not later than 90 days after  
15 the date of enactment of this Act, the Secretary of Energy  
16 shall establish a program to provide rebates to qualified  
17 entities for expenditures made by the qualified entity for  
18 the replacement of a qualified energy inefficient trans-  
19 former with a qualified energy efficient transformer.

20 (c) REQUIREMENTS.—To be eligible to receive a re-  
21 bate under this section, an entity shall submit to the Sec-  
22 retary of Energy an application in such form, at such  
23 time, and containing such information as the Secretary  
24 of Energy may require, including demonstrated evidence—

1 (1) that the entity purchased a qualified energy  
2 efficient transformer;

3 (2) of the core loss value of the qualified energy  
4 efficient transformer;

5 (3) of the age of the qualified energy inefficient  
6 transformer being replaced;

7 (4) of the core loss value of the qualified energy  
8 inefficient transformer being replaced—

9 (A) as measured by a qualified professional  
10 or verified by the equipment manufacturer, as  
11 applicable; or

12 (B) for transformers described in sub-  
13 section (a)(2)(B)(i), as selected from a table of  
14 default values as determined by the Secretary  
15 of Energy in consultation with applicable indus-  
16 try; and

17 (5) that the qualified energy inefficient trans-  
18 former has been permanently decommissioned and  
19 scrapped.

20 (d) AUTHORIZED AMOUNT OF REBATE.—The  
21 amount of a rebate provided under this section shall be—

22 (1) for a 3-phase or single-phase transformer  
23 with a capacity of not less than 10 and not greater  
24 than 2,500 kilovolt-amperes, twice the amount equal  
25 to the difference in Watts between the core loss

1 value (as measured in accordance with paragraphs  
2 (2) and (4) of subsection (c)) of—

3 (A) the qualified energy inefficient trans-  
4 former; and

5 (B) the qualified energy efficient trans-  
6 former; or

7 (2) for a transformer described in subsection  
8 (a)(2)(B)(i), the amount determined using a table of  
9 default rebate values by rated transformer output,  
10 as measured in kilovolt-amperes, as determined by  
11 the Secretary of Energy in consultation with applica-  
12 ble industry.

13 (e) AUTHORIZATION OF APPROPRIATIONS.—There is  
14 authorized to be appropriated to carry out this section  
15 \$5,000,000 for each of fiscal years 2021 and 2022, to re-  
16 main available until expended.

17 (f) TERMINATION OF EFFECTIVENESS.—The author-  
18 ity provided by this section terminates on December 31,  
19 2022.

## 20 **Subtitle C—Federal Agency Energy** 21 **Efficiency**

### 22 **SEC. 1301. ENERGY-EFFICIENT AND ENERGY-SAVING IN-** 23 **FORMATION TECHNOLOGIES.**

24 (a) IN GENERAL.—Subtitle C of title V of the Energy  
25 Independence and Security Act of 2007 (Public Law 110–

1 140; 121 Stat. 1661) is amended by adding at the end  
2 the following:

3 **“SEC. 530. ENERGY-EFFICIENT AND ENERGY-SAVING INFOR-**  
4 **MATION TECHNOLOGIES.**

5 “(a) DEFINITIONS.—In this section:

6 “(1) DIRECTOR.—The term ‘Director’ means  
7 the Director of the Office of Management and Budg-  
8 et.

9 “(2) INFORMATION TECHNOLOGY.—The term  
10 ‘information technology’ has the meaning given that  
11 term in section 11101 of title 40, United States  
12 Code.

13 “(b) DEVELOPMENT OF IMPLEMENTATION STRAT-  
14 EGY.—Not later than 1 year after the date of enactment  
15 of this section, each Federal agency shall coordinate with  
16 the Director, the Secretary, and the Administrator of the  
17 Environmental Protection Agency to develop an implemen-  
18 tation strategy (that includes best practices and measure-  
19 ment and verification techniques) for the maintenance,  
20 purchase, and use by the Federal agency of energy-effi-  
21 cient and energy-saving information technologies at or for  
22 federally owned and operated facilities, taking into consid-  
23 eration the performance goals established under sub-  
24 section (d).

1       “(c) ADMINISTRATION.—In developing an implemen-  
2   tation strategy under subsection (b), each Federal agency  
3   shall consider—

4               “(1) advanced metering infrastructure;

5               “(2) energy-efficient data center strategies and  
6   methods of increasing asset and infrastructure utili-  
7   zation;

8               “(3) advanced power management tools;

9               “(4) building information modeling, including  
10   building energy management;

11              “(5) secure telework and travel substitution  
12   tools; and

13              “(6) mechanisms to ensure that the agency re-  
14   alizes the energy cost savings brought about through  
15   increased efficiency and utilization.

16       “(d) PERFORMANCE GOALS.—

17              “(1) IN GENERAL.—Not later than 180 days  
18   after the date of enactment of this section, the Di-  
19   rector, in consultation with the Secretary, shall es-  
20   tablish performance goals for evaluating the efforts  
21   of Federal agencies in improving the maintenance,  
22   purchase, and use of energy-efficient and energy-sav-  
23   ing information technology at or for federally owned  
24   and operated facilities.

1           “(2) BEST PRACTICES.—The Chief Information  
2           Officers Council established under section 3603 of  
3           title 44, United States Code, shall recommend best  
4           practices for the attainment of the performance  
5           goals, which shall include Federal agency consider-  
6           ation of, to the extent applicable by law, the use  
7           of—

8                   “(A) energy savings performance con-  
9                   tracting; and

10                   “(B) utility energy services contracting.

11           “(e) REPORTS.—

12                   “(1) AGENCY REPORTS.—Each Federal agency  
13           shall include in the report of the agency under sec-  
14           tion 527 a description of the efforts and results of  
15           the agency under this section.

16                   “(2) OMB GOVERNMENT EFFICIENCY REPORTS  
17           AND SCORECARDS.—Effective beginning not later  
18           than October 1, 2021, the Director shall include in  
19           the annual report and scorecard of the Director re-  
20           quired under section 528 a description of the efforts  
21           and results of Federal agencies under this section.”.

22           (b) CONFORMING AMENDMENT.—The table of con-  
23           tents for the Energy Independence and Security Act of  
24           2007 is amended by adding after the item relating to sec-  
25           tion 529 the following:

          “Sec. 530. Energy-efficient and energy-saving information technologies.”.

1   **SEC. 1302. ENERGY EFFICIENT DATA CENTERS.**

2           Section 453 of the Energy Independence and Security  
3   Act of 2007 (42 U.S.C. 17112) is amended—

4           (1) in subsection (b)—

5                   (A) in paragraph (2)(D)(iv), by striking  
6           “determined by the organization” and inserting  
7           “proposed by the stakeholders”; and

8                   (B) by striking paragraph (3); and

9           (2) by striking subsections (c) through (g) and  
10   inserting the following:

11   “(c) **STAKEHOLDER INVOLVEMENT.**—The Secretary  
12   and the Administrator shall carry out subsection (b) in  
13   collaboration with information technology industry and  
14   other key stakeholders, with the goal of producing results  
15   that accurately reflect the most relevant and useful infor-  
16   mation. In such collaboration, the Secretary and the Ad-  
17   ministrator shall pay particular attention to organizations  
18   that—

19           “(1) have members with expertise in energy ef-  
20   ficiency and in the development, operation, and  
21   functionality of data centers, information technology  
22   equipment, and software, such as representatives of  
23   hardware manufacturers, data center operators, and  
24   facility managers;

25           “(2) obtain and address input from Department  
26   of Energy National Laboratories or any college, uni-



1       versity, research institution, industry association,  
2       company, or public interest group with applicable ex-  
3       pertise;

4           “(3) follow—

5               “(A) commonly accepted procedures for  
6               the development of specifications; and

7               “(B) accredited standards development  
8               processes; and

9           “(4) have a mission to promote energy effi-  
10       ciency for data centers and information technology.

11       “(d) MEASUREMENTS AND SPECIFICATIONS.—The  
12       Secretary and the Administrator shall consider and assess  
13       the adequacy of the specifications, measurements, best  
14       practices, and benchmarks described in subsection (b) for  
15       use by the Federal Energy Management Program, the En-  
16       ergy Star Program, and other efficiency programs of the  
17       Department of Energy or the Environmental Protection  
18       Agency.

19       “(e) STUDY.—The Secretary, in collaboration with  
20       the Administrator, shall, not later than 4 years after the  
21       date of enactment of the Clean Economy Jobs and Innova-  
22       tion Act, make available to the public an update to the  
23       report of the Lawrence Berkeley National Laboratory en-  
24       titled ‘United States Data Center Energy Usage Report’  
25       and dated June, 2016 (prepared as an update to the Re-

1 port to Congress on Server and Data Center Energy Effi-  
2 ciency, published on August 2, 2007, under section 1 of  
3 Public Law 109–431 (120 Stat. 2920)), that includes—

4 “(1) a comparison and gap analysis of the esti-  
5 mates and projections contained in the report with  
6 new data regarding the period from 2015 through  
7 2020;

8 “(2) an analysis considering the impact of in-  
9 formation technologies, including virtualization and  
10 cloud computing, in the public and private sectors;

11 “(3) an evaluation of the impact of the com-  
12 bination of cloud platforms, mobile devices, social  
13 media, and big data on data center energy usage;

14 “(4) an evaluation of water usage in data cen-  
15 ters and recommendations for reductions in such  
16 water usage; and

17 “(5) updated projections and recommendations  
18 for best practices through fiscal year 2025.

19 “(f) DATA CENTER ENERGY PRACTITIONER PRO-  
20 GRAM.—The Secretary, in collaboration with key stake-  
21 holders and the Director of the Office of Management and  
22 Budget, shall maintain a data center energy practitioner  
23 program that leads to the certification of energy practi-  
24 tioners qualified to evaluate the energy usage and effi-  
25 ciency opportunities in federally owned and operated data

1 centers. Each Federal agency shall consider having the  
2 data centers of the agency evaluated every 4 years, in ac-  
3 cordance with section 543(f) of the National Energy Con-  
4 servation Policy Act, by energy practitioners certified pur-  
5 suant to such program.

6 “(g) OPEN DATA INITIATIVE.—The Secretary, in col-  
7 laboration with key stakeholders and the Office of Man-  
8 agement and Budget, shall establish an open data initia-  
9 tive relating to energy usage at federally owned and oper-  
10 ated data centers, with the purpose of making such data  
11 available and accessible in a manner that encourages fur-  
12 ther data center innovation, optimization, and consolida-  
13 tion. In establishing the initiative, the Secretary shall con-  
14 sider the use of the online Data Center Maturity Model.

15 “(h) INTERNATIONAL SPECIFICATIONS AND  
16 METRICS.—The Secretary, in collaboration with key  
17 stakeholders, shall actively participate in efforts to har-  
18 monize global specifications and metrics for data center  
19 energy and water efficiency.

20 “(i) DATA CENTER UTILIZATION METRIC.—The Sec-  
21 retary, in collaboration with key stakeholders, shall facili-  
22 tate in the development of an efficiency metric that meas-  
23 ures the energy efficiency of a data center (including  
24 equipment and facilities).

1 “(j) PROTECTION OF PROPRIETARY INFORMATION.—  
2 The Secretary and the Administrator shall not disclose  
3 any proprietary information or trade secrets provided by  
4 any individual or company for the purposes of carrying  
5 out this section or the programs and initiatives established  
6 under this section.”.

## 7 **Subtitle D—Regulatory Provisions**

### 8 **PART 1—FEDERAL GREEN BUILDINGS**

#### 9 **SEC. 1401. HIGH-PERFORMANCE GREEN FEDERAL BUILD-** 10 **INGS.**

11 Section 436(h) of the Energy Independence and Se-  
12 curity Act of 2007 (42 U.S.C. 17092(h)) is amended—

13 (1) in the subsection heading, by striking “SYS-  
14 TEM” and inserting “SYSTEMS”;

15 (2) by striking paragraph (1) and inserting the  
16 following:

17 “(1) IN GENERAL.—Based on an ongoing re-  
18 view, the Federal Director shall identify and shall  
19 provide to the Secretary pursuant to section  
20 305(a)(3)(D) of the Energy Conservation and Pro-  
21 duction Act (42 U.S.C. 6834(a)(3)(D)) a list of  
22 those certification systems that the Director identi-  
23 fies as the most likely to encourage a comprehensive  
24 and environmentally sound approach to certification  
25 of green buildings.”; and

1 (3) in paragraph (2)—

2 (A) in the matter preceding subparagraph  
3 (A), by striking “system” and inserting “sys-  
4 tems”;

5 (B) by striking subparagraph (A) and in-  
6 serting the following:

7 “(A) an ongoing review provided to the  
8 Secretary pursuant to section 305(a)(3)(D) of  
9 the Energy Conservation and Production Act  
10 (42 U.S.C. 6834(a)(3)(D)), which shall—

11 “(i) be carried out by the Federal Di-  
12 rector to compare and evaluate standards;  
13 and

14 “(ii) allow any developer or adminis-  
15 trator of a rating system or certification  
16 system to be included in the review;”;

17 (C) in subparagraph (E)(v), by striking  
18 “and” after the semicolon at the end;

19 (D) in subparagraph (F), by striking the  
20 period at the end and inserting a semicolon;  
21 and

22 (E) by adding at the end the following:

23 “(G) a finding that, for all credits address-  
24 ing the sourcing of grown, harvested, or mined  
25 materials, the system rewards the use of prod-

1           ucts that have obtained certifications of respon-  
2           sible sourcing, such as certifications provided by  
3           the Sustainable Forestry Initiative, the Forest  
4           Stewardship Council, the American Tree Farm  
5           System, or the Programme for the Endorse-  
6           ment of Forest Certification; and

7                   “(H) a finding that the system incor-  
8           porates life-cycle assessment as a credit path-  
9           way.”.

## 10       **PART 2—ENERGY AND WATER PERFORMANCE**

### 11       **REQUIREMENTS FOR FEDERAL BUILDINGS**

#### 12       **SEC. 1411. FEDERAL ENERGY MANAGEMENT PROGRAM.**

13       Section 543 of the National Energy Conservation  
14       Policy Act (42 U.S.C. 8253) is amended by adding at the  
15       end the following:

16       “(h) FEDERAL ENERGY MANAGEMENT PROGRAM.—

17               “(1) IN GENERAL.—The Secretary shall carry  
18       out a program, to be known as the ‘Federal Energy  
19       Management Program’ (referred to in this sub-  
20       section as the ‘Program’), to facilitate the implemen-  
21       tation by the Federal Government of cost-effective  
22       energy and water management and energy-related  
23       investment practices—

24               “(A) to coordinate and strengthen Federal  
25       energy and water resilience; and

1 “(B) to promote environmental steward-  
2 ship.

3 “(2) FEDERAL DIRECTOR.—The Secretary shall  
4 appoint an individual to serve as the director of the  
5 Program (referred to in this subsection as the ‘Fed-  
6 eral Director’), which shall be a career position in  
7 the Senior Executive service, to administer the Pro-  
8 gram.

9 “(3) PROGRAM ACTIVITIES.—

10 “(A) STRATEGIC PLANNING AND TECH-  
11 NICAL ASSISTANCE.—In administering the Pro-  
12 gram, the Federal Director shall—

13 “(i) provide technical assistance and  
14 project implementation support and guid-  
15 ance to agencies to identify, implement,  
16 procure, and track energy and water con-  
17 servation measures required under this Act  
18 and under other provisions of law;

19 “(ii) in coordination with the Admin-  
20 istrator of the General Services Adminis-  
21 tration, establish appropriate procedures,  
22 methods, and best practices for use by  
23 agencies to select, monitor, and terminate  
24 contracts entered into pursuant to a utility

1 incentive program under section 546(c)  
2 with utilities;

3 “(iii) carry out the responsibilities of  
4 the Secretary under section 801, as deter-  
5 mined appropriate by the Secretary;

6 “(iv) establish and maintain internet-  
7 based information resources and project  
8 tracking systems and tools for energy and  
9 water management;

10 “(v) coordinate comprehensive and  
11 strategic approaches to energy and water  
12 resilience planning for agencies; and

13 “(vi) establish a recognition program  
14 for Federal achievement in energy and  
15 water management, energy-related invest-  
16 ment practices, environmental stewardship,  
17 and other relevant areas, through events  
18 such as individual recognition award cere-  
19 monies and public announcements.

20 “(B) ENERGY AND WATER MANAGEMENT  
21 AND REPORTING.—In administering the Pro-  
22 gram, the Federal Director shall—

23 “(i) track and report on the progress  
24 of agencies in meeting the requirements of  
25 the agency under this section;



1 “(ii) make publicly available agency  
2 performance data required under—

3 “(I) this section and sections  
4 544, 546, 547, and 548; and

5 “(II) section 203 of the Energy  
6 Policy Act of 2005 (42 U.S.C.  
7 15852);

8 “(iii)(I) collect energy and water use  
9 and consumption data from each agency;  
10 and

11 “(II) based on that data, submit to  
12 each agency a report that will facilitate the  
13 energy and water management, energy-re-  
14 lated investment practices, and environ-  
15 mental stewardship of the agency in sup-  
16 port of Federal goals under this Act and  
17 under other provisions of law;

18 “(iv) carry out the responsibilities of  
19 the Secretary under section 305 of the En-  
20 ergy Conservation and Production Act (42  
21 U.S.C. 6834);

22 “(v) in consultation with the Adminis-  
23 trator of the General Services Administra-  
24 tion, acting through the head of the Office  
25 of High-Performance Green Buildings, es-

1           tablish and implement sustainable design  
2           principles for Federal facilities; and

3           “(vi) designate products that meet the  
4           highest energy conservation standards for  
5           categories not covered under the Energy  
6           Star program established under section  
7           324A of the Energy Policy and Conserva-  
8           tion Act (42 U.S.C. 6294a).

9           “(C) FEDERAL INTERAGENCY COORDINA-  
10          TION.—In administering the Program, the Fed-  
11          eral Director shall—

12           “(i) develop and implement accredited  
13           training consistent with existing Federal  
14           programs and activities—

15           “(I) relating to energy and water  
16           use, management, and resilience in  
17           Federal facilities, energy-related in-  
18           vestment practices, and environmental  
19           stewardship; and

20           “(II) that includes in-person  
21           training, internet-based programs,  
22           and national in-person training  
23           events;

24           “(ii) carry out the functions of the  
25          Secretary with respect to the Interagency

1 Energy Management Task Force under  
2 section 547; and

3 “(iii) report on the implementation of  
4 the priorities of the President, including  
5 Executive orders, relating to energy and  
6 water use in Federal facilities, in coordina-  
7 tion with—

8 “(I) the Office of Management  
9 and Budget;

10 “(II) the Council on Environ-  
11 mental Quality; and

12 “(III) any other entity, as consid-  
13 ered necessary by the Federal Direc-  
14 tor.

15 “(D) FACILITY AND FLEET OPTIMIZA-  
16 TION.—In administering the Program, the Fed-  
17 eral Director shall develop guidance, supply as-  
18 sistance to, and track the progress of agen-  
19 cies—

20 “(i) in conducting portfolio-wide facil-  
21 ity energy and water resilience planning  
22 and project integration;

23 “(ii) in building new construction and  
24 major renovations to meet the sustainable

1 design and energy and water performance  
2 standards required under this section;

3 “(iii) in developing guidelines for—

4 “(I) facility commissioning; and

5 “(II) facility operations and  
6 maintenance; and

7 “(iv) in coordination with the Admin-  
8 istrator of the General Services Adminis-  
9 tration, in meeting statutory and agency  
10 goals for Federal fleet vehicles.

11 “(4) MANAGEMENT COUNCIL.—The Federal Di-  
12 rector shall establish a management council to ad-  
13 vise the Federal Director that shall—

14 “(A) convene not less frequently than once  
15 every quarter; and

16 “(B) consist of representatives from—

17 “(i) the Council on Environmental  
18 Quality;

19 “(ii) the Office of Management and  
20 Budget; and

21 “(iii) the Office of Federal High-Per-  
22 formance Green Buildings in the General  
23 Services Administration.

24 “(5) AUTHORIZATION OF APPROPRIATIONS.—

25 There is authorized to be appropriated to the Sec-

1       retary to carry out this subsection \$36,000,000 for  
2       each of fiscal years 2021 through 2025.”.

3   **SEC. 1412. FEDERAL BUILDING ENERGY EFFICIENCY PER-**  
4                   **FORMANCE STANDARDS; CERTIFICATION**  
5                   **SYSTEM AND LEVEL FOR GREEN BUILDINGS.**

6       (a) DEFINITIONS.—Section 303 of the Energy Con-  
7       servation and Production Act (42 U.S.C. 6832) is further  
8       amended by adding at the end the following:

9               “(19) MAJOR RENOVATION.—The term ‘major  
10       renovation’ means a modification of the energy sys-  
11       tems of a building that is sufficiently extensive to  
12       ensure that the entire building can achieve compli-  
13       ance with applicable energy standards for new build-  
14       ings, as established by the Secretary.”.

15       (b) FEDERAL BUILDING EFFICIENCY STANDARDS.—  
16       Section 305 of the Energy Conservation and Production  
17       Act (42 U.S.C. 6834) is amended—

18               (1) in subsection (a)(3)—

19                       (A) by striking “(3)(A) Not later than”  
20                       and all that follows through subparagraph (B)  
21                       and inserting the following:

22               “(3) REVISED FEDERAL BUILDING ENERGY EF-  
23       FICIENCY PERFORMANCE STANDARDS; CERTIFI-  
24       CATION FOR GREEN BUILDINGS.—

1                   “(A) REVISED FEDERAL BUILDING EN-  
2                   ERGY EFFICIENCY PERFORMANCE STAND-  
3                   ARDS.—

4                   “(i) IN GENERAL.—Not later than 1  
5                   year after the date of enactment of the  
6                   Clean Economy Jobs and Innovation Act,  
7                   the Secretary shall establish, by regulation,  
8                   revised Federal building energy efficiency  
9                   performance standards that require that—

10                   “(I) subject to clause (ii), new  
11                   Federal buildings and Federal build-  
12                   ings with major renovations—

13                   “(aa) meet or exceed the  
14                   most recently published version  
15                   of the International Energy Con-  
16                   servation Code (in the case of  
17                   residential buildings) or  
18                   ASHRAE Standard 90.1 (in the  
19                   case of commercial buildings) as  
20                   of the date of enactment of the  
21                   Clean Economy Jobs and Innova-  
22                   tion Act; and

23                   “(bb) meet or exceed the en-  
24                   ergy provisions of the State and  
25                   local building codes applicable to

1 the building if the codes are more  
2 stringent than the most recently  
3 published version of the Inter-  
4 national Energy Conservation  
5 Code or ASHRAE Standard 90.1  
6 as of the date of enactment of  
7 the Clean Economy Jobs and In-  
8 novation Act, as applicable;

9 “(II) unless demonstrated not to  
10 be life cycle cost-effective for new  
11 Federal buildings and Federal build-  
12 ings with major renovations—

13 “(aa) the buildings shall be  
14 designed to achieve energy con-  
15 sumption levels that are not less  
16 than 30 percent below the levels  
17 established in the most recently  
18 published version of the Inter-  
19 national Energy Conservation  
20 Code or the ASHRAE Standard,  
21 as of the date of enactment of  
22 the Clean Economy Jobs and In-  
23 novation Act, as appropriate; and

24 “(bb) sustainable design  
25 principles are applied to the loca-

1                   tion, siting, design, and construc-  
2                   tion of all new Federal buildings  
3                   and replacement Federal build-  
4                   ings;

5                   “(III) if water is used to achieve  
6                   energy efficiency, water conservation  
7                   technologies shall be applied to the ex-  
8                   tent that the technologies are life-  
9                   cycle cost effective; and

10                  “(IV) if life-cycle cost effective,  
11                  as compared to other reasonably avail-  
12                  able technologies, not less than 30  
13                  percent of the hot water demand for  
14                  each new Federal building or Federal  
15                  building undergoing a major renova-  
16                  tion be met through the installation  
17                  and use of solar hot water heaters.

18                  “(ii) EXCEPTION.—Clause (i)(I) shall  
19                  not apply to the unaltered portions of Fed-  
20                  eral buildings and systems that have un-  
21                  dergone major renovations.

22                  “(B) UPDATES.—Not later than 1 year  
23                  after the date of approval of each subsequent  
24                  revision of the ASHRAE Standard or the Inter-  
25                  national Energy Conservation Code, as appro-



1           prios, the Secretary shall determine whether  
2           the revised standards established under sub-  
3           clauses (I) and (II) of subparagraph (A)(i)  
4           should be updated to reflect the revisions, based  
5           on the energy savings and life cycle cost-effec-  
6           tiveness of the revisions.”;

7           (B) in subparagraph (C), by striking “(C)  
8           In the budget request” and inserting the fol-  
9           lowing:

10           “(C) BUDGET REQUEST.—In the budget  
11           request”; and

12           (C) in subparagraph (D)—

13           (i) by striking subclause (III) of  
14           clause (i);

15           (ii) by striking “(D) Not later than”  
16           and inserting the following:

17           “(D) STANDARDS; CERTIFICATION FOR  
18           GREEN BUILDINGS.—

19           “(i) STANDARDS.—Not later than”;

20           (iii) by striking “standards that re-  
21           quire that:” and all that follows through  
22           “For new Federal buildings” and inserting  
23           “standards that require that, for new  
24           buildings”; and

1 (iv) by striking clauses (ii) through  
2 (vii) and inserting the following:

3 “(ii) SUSTAINABLE DESIGN PRIN-  
4 CIPLES.—Sustainable design principles  
5 shall be applied to the siting, design, and  
6 construction of buildings covered by this  
7 subparagraph.

8 “(iii) SELECTION OF CERTIFICATION  
9 SYSTEMS.—The Secretary, after reviewing  
10 the findings of the Federal Director under  
11 section 436(h) of the Energy Independence  
12 and Security Act of 2007 (42 U.S.C.  
13 17092(h)), in consultation with the Admin-  
14 istrator of General Services, and in con-  
15 sultation with the Secretary of Defense re-  
16 lating to those facilities under the custody  
17 and control of the Department of Defense,  
18 shall determine those certification systems  
19 for green commercial and residential build-  
20 ings that the Secretary determines to be  
21 the most likely to encourage a comprehen-  
22 sive and environmentally sound approach  
23 to certification of green buildings.

24 “(iv) BASIS FOR SELECTION.—The  
25 determination of the certification systems

1 under clause (iii) shall be based on ongoing  
2 review of the findings of the Federal Direc-  
3 tor under section 436(h) of the Energy  
4 Independence and Security Act of 2007  
5 (42 U.S.C. 17092(h)) and the criteria de-  
6 scribed in clause (vi).

7 “(v) ADMINISTRATION.—In deter-  
8 mining certification systems under this  
9 subparagraph, the Secretary shall—

10 “(I) make a separate determina-  
11 tion for all or part of each system;  
12 and

13 “(II) confirm that the criteria  
14 used to support the selection of build-  
15 ing products, materials, brands, and  
16 technologies—

17 “(aa) are based on relevant  
18 technical data;

19 “(bb) use and reward eval-  
20 uation of health, safety, and envi-  
21 ronmental risks and impacts  
22 across the lifecycle of the build-  
23 ing product, material, brand, or  
24 technology, including methodolo-

1                   gies generally accepted by the ap-  
2                   plicable scientific disciplines;

3                   “(cc) as practicable, give  
4                   preference to performance stand-  
5                   ards instead of prescriptive meas-  
6                   ures; and

7                   “(dd) reward continual im-  
8                   provements in the lifecycle man-  
9                   agement of health, safety, and  
10                  environmental risks and impacts.

11               “(vi) CONSIDERATIONS.—In deter-  
12               mining the green building certification sys-  
13               tems under this subparagraph, the Sec-  
14               retary shall take into consideration—

15               “(I) the ability and availability of  
16               assessors and auditors to independ-  
17               ently verify the criteria and measure-  
18               ment of metrics at the scale necessary  
19               to implement this subparagraph;

20               “(II) the ability of the applicable  
21               certification organization to collect  
22               and reflect public comment;

23               “(III) the ability of the standard  
24               to be developed and revised through a  
25               consensus-based process;

1 “(IV) an evaluation of the  
2 robustness of the criteria for a high-  
3 performance green building, which  
4 shall give credit for promoting—

5 “(aa) efficient and sustain-  
6 able use of water, energy, and  
7 other natural resources;

8 “(bb) use of renewable en-  
9 ergy sources;

10 “(cc) improved indoor envi-  
11 ronmental quality through en-  
12 hanced indoor air quality, ther-  
13 mal comfort, acoustics, day light-  
14 ing, pollutant source control, and  
15 use of low-emission materials and  
16 building system controls;

17 “(dd)(AA) the sourcing of  
18 grown, harvested, or mined mate-  
19 rials; and

20 “(BB) certifications of re-  
21 sponsible sourcing, such as cer-  
22 tifications provided by the Forest  
23 Stewardship Council, the Sus-  
24 tainable Forestry Initiative, the  
25 American Tree Farm System, or

1 the Programme for the Endorse-  
2 ment of Forest Certification; and

3 “(ee) such other criteria as  
4 the Secretary determines to be  
5 appropriate; and

6 “(V) national recognition within  
7 the building industry.

8 “(vii) REVIEW.—The Secretary, in  
9 consultation with the Administrator of  
10 General Services and the Secretary of De-  
11 fense, shall conduct an ongoing review to  
12 evaluate and compare private sector green  
13 building certification systems, taking into  
14 account—

15 “(I) the criteria described in  
16 clause (vi); and

17 “(II) the identification made by  
18 the Federal Director under section  
19 436(h) of the Energy Independence  
20 and Security Act of 2007 (42 U.S.C.  
21 17092(h)).

22 “(viii) EXCLUSIONS.—

23 “(I) IN GENERAL.—Subject to  
24 subclause (II), if a certification sys-  
25 tem fails to meet the review require-

1                   ments of clause (vi), the Secretary  
2                   shall—

3                   “(aa) identify the portions  
4                   of the system, whether pre-  
5                   requisites, credits, points, or oth-  
6                   erwise, that meet the review cri-  
7                   teria of clause (vi);

8                   “(bb) determine the portions  
9                   of the system that are suitable  
10                  for use; and

11                  “(cc) exclude all other por-  
12                  tions of the system from identi-  
13                  fication and use.

14                  “(II) ENTIRE SYSTEMS.—The  
15                  Secretary shall exclude an entire sys-  
16                  tem from use if an exclusion under  
17                  subclause (I)—

18                  “(aa) impedes the integrated  
19                  use of the system;

20                  “(bb) creates disparate re-  
21                  view criteria or unequal point ac-  
22                  cess for competing materials; or

23                  “(cc) increases agency costs  
24                  of the use.

1                   “(ix) INTERNAL CERTIFICATION PROC-  
2                   ESSES.—The Secretary may by rule allow  
3                   Federal agencies to develop internal certifi-  
4                   cation processes, using certified profes-  
5                   sionals, in lieu of certification by certifi-  
6                   cation entities identified under clause (iii).

7                   “(x) PRIVATIZED MILITARY HOUS-  
8                   ING.—With respect to privatized military  
9                   housing, the Secretary of Defense, after  
10                  consultation with the Secretary may,  
11                  through rulemaking, develop alternative  
12                  certification systems and levels than the  
13                  systems and levels identified under clause  
14                  (iii) that achieve an equivalent result in  
15                  terms of energy savings, sustainable de-  
16                  sign, and green building performance.

17                  “(xi) WATER CONSERVATION TECH-  
18                  NOLOGIES.—In addition to any use of  
19                  water conservation technologies otherwise  
20                  required by this section, water conservation  
21                  technologies shall be applied to the extent  
22                  that the technologies are life-cycle cost-ef-  
23                  fective.

24                  “(xii) EFFECTIVE DATE.—



1 “(I) DETERMINATIONS MADE  
2 AFTER DECEMBER 31, 2020.—The  
3 amendments made by section  
4 1422(b)(1)(C) of the Clean Economy  
5 Jobs and Innovation Act shall apply  
6 to any determination made by a Fed-  
7 eral agency after December 31, 2020.

8 “(II) DETERMINATIONS MADE ON  
9 OR BEFORE DECEMBER 31, 2020.—  
10 This subparagraph (as in effect on the  
11 day before the date of enactment of  
12 the Clean Economy Jobs and Innova-  
13 tion Act) shall apply to any use of a  
14 certification system for green commer-  
15 cial and residential buildings by a  
16 Federal agency on or before December  
17 31, 2020.”; and

18 (2) by striking subsections (c) and (d) and in-  
19 serting the following:

20 “(c) PERIODIC REVIEW.—The Secretary shall—

21 “(1) once every 5 years, review the Federal  
22 building energy standards established under this sec-  
23 tion; and

24 “(2) on completion of a review under paragraph  
25 (1), if the Secretary determines that significant en-

1       ergy savings would result, upgrade the standards to  
2       include all new energy efficiency and renewable en-  
3       ergy measures that are technologically feasible and  
4       economically justified.”.

5       (c) FEDERAL COMPLIANCE.—Section 306 of the En-  
6       ergy Conservation and Production Act (42 U.S.C. 6835)  
7       is amended—

8               (1) in subsection (a)—

9                       (A) in paragraph (1)—

10                               (i) by striking “(1) The head” and in-  
11                               serting the following:

12                               “(1) IN GENERAL.—The head”; and

13                               (ii) by striking “assure that new Fed-  
14                               eral buildings” and inserting “ensure that  
15                               new Federal buildings and Federal build-  
16                               ings with major renovations”; and

17               (B) in paragraph (2)—

18                       (i) by striking the second sentence  
19                       and inserting the following:

20                       “(B) PROCEDURES.—The Architect of the  
21                       Capitol shall adopt procedures necessary to en-  
22                       sure that the buildings referred to in subpara-  
23                       graph (A) meet or exceed the standards de-  
24                       scribed in that subparagraph.”; and

25                       (ii) in the first sentence—

1 (I) by inserting “and Federal  
2 buildings with major renovations”  
3 after “new buildings”; and

4 (II) by striking “(2) The Fed-  
5 eral” and inserting the following:

6 “(2) APPLICABILITY.—

7 “(A) IN GENERAL.—The Federal”; and

8 (2) in subsection (b)—

9 (A) by striking the subsection heading and  
10 inserting “EXPENDITURES”; and

11 (B) by inserting “or a Federal building  
12 with major renovations” after “new Federal  
13 building”.

## 14 **Subtitle E—HOPE for HOMES**

### 15 **SEC. 1501. DEFINITIONS.**

16 In this subtitle:

17 (1) CONTRACTOR CERTIFICATION.—The term  
18 “contractor certification” means an industry recog-  
19 nized certification that may be obtained by a resi-  
20 dential contractor to advance the expertise and edu-  
21 cation of the contractor in energy efficiency retrofits  
22 of residential buildings, including—

23 (A) a certification provided by—

24 (i) the Building Performance Insti-  
25 tute;

1 (ii) the Air Conditioning Contractors  
2 of America;

3 (iii) the National Comfort Institute;

4 (iv) the North American Technician  
5 Excellence;

6 (v) RESNET;

7 (vi) the United States Green Building  
8 Council; or

9 (vii) Home Innovation Research Labs;  
10 and

11 (B) any other certification the Secretary  
12 determines appropriate for purposes of the  
13 Home Energy Savings Retrofit Rebate Pro-  
14 gram.

15 (2) CONTRACTOR COMPANY.—The term “con-  
16 tractor company” means a company—

17 (A) the business of which is to provide  
18 services to residential building owners with re-  
19 spect to HVAC systems, insulation, air sealing,  
20 or other services that are approved by the Sec-  
21 retary;

22 (B) that holds the licenses and insurance  
23 required by the State in which the company  
24 provides services; and

1 (C) that provides services for which a par-  
2 tial system rebate, measured performance re-  
3 bate, or modeled performance rebate may be  
4 provided pursuant to the Home Energy Savings  
5 Retrofit Rebate Program.

6 (3) ENERGY AUDIT.—The term “energy audit”  
7 means an inspection, survey, and analysis of the en-  
8 ergy use of a building, including the building enve-  
9 lope and HVAC system.

10 (4) HOME.—The term “home” means a resi-  
11 dential dwelling unit in a building with no more than  
12 4 dwelling units that—

13 (A) is located in the United States;

14 (B) was constructed before the date of en-  
15 actment of this Act; and

16 (C) is occupied at least 6 months out of  
17 the year.

18 (5) HOME ENERGY SAVINGS RETROFIT REBATE  
19 PROGRAM.—The term “Home Energy Savings Ret-  
20 rofit Rebate Program” means the Home Energy  
21 Savings Retrofit Rebate Program established under  
22 section 1521.

23 (6) HOMEOWNER.—The term “homeowner”  
24 means the owner of an owner-occupied home or a  
25 tenant-occupied home.

1 (7) HOME VALUATION CERTIFICATION.—The  
2 term “home valuation certification” means the fol-  
3 lowing home assessments:

4 (A) Home Energy Score.

5 (B) PEARL Certification.

6 (C) National Green Building Standard.

7 (D) LEED.

8 (E) Any other assessment the Secretary  
9 determines to be appropriate.

10 (8) HOPE QUALIFICATION.—The term “HOPE  
11 Qualification” means the qualification described in  
12 section 1513.

13 (9) HOPE TRAINING CREDIT.—The term  
14 “HOPE training credit” means a HOPE training  
15 task credit or a HOPE training supplemental credit.

16 (10) HOPE TRAINING TASK CREDIT.—The  
17 term “HOPE training task credit” means a credit  
18 described in section 1512(a).

19 (11) HOPE TRAINING SUPPLEMENTAL CRED-  
20 IT.—The term “HOPE training supplemental cred-  
21 it” means a credit described in section 1512(b).

22 (12) HVAC SYSTEM.—The term “HVAC sys-  
23 tem” means a system—

1 (A) consisting of a heating component, a  
2 ventilation component, and an air-conditioning  
3 component; and

4 (B) which components may include central  
5 air conditioning, a heat pump, a furnace, a boil-  
6 er, a rooftop unit, and a window unit.

7 (13) MEASURED PERFORMANCE REBATE.—The  
8 term “measured performance rebate” means a re-  
9 bate provided in accordance with section 1523 and  
10 described in subsection (e) of that section.

11 (14) MODELED PERFORMANCE REBATE.—The  
12 term “modeled performance rebate” means a rebate  
13 provided in accordance with section 1523 and de-  
14 scribed in subsection (d) of that section.

15 (15) MODERATE INCOME.—The term “mod-  
16 erate income” means, with respect to a household, a  
17 household with an annual income that is less than  
18 80 percent of the area median income, as deter-  
19 mined annually by the Department of Housing and  
20 Urban Development.

21 (16) PARTIAL SYSTEM REBATE.—The term  
22 “partial system rebate” means a rebate provided in  
23 accordance with section 1522.

24 (17) SECRETARY.—The term “Secretary”  
25 means the Secretary of Energy.

1 (18) STATE.—The term “State” includes—

2 (A) a State;

3 (B) the District of Columbia;

4 (C) the Commonwealth of Puerto Rico;

5 (D) Guam;

6 (E) American Samoa;

7 (F) the Commonwealth of the Northern  
8 Mariana Islands;

9 (G) the United States Virgin Islands; and

10 (H) any other territory or possession of the  
11 United States.

12 (19) STATE ENERGY OFFICE.—The term “State  
13 energy office” means the office or agency of a State  
14 responsible for developing the State energy conserva-  
15 tion plan for the State under section 362 of the En-  
16 ergy Policy and Conservation Act (42 U.S.C. 6322).

17 **PART 1—HOPE TRAINING**

18 **SEC. 1511. NOTICE FOR HOPE QUALIFICATION TRAINING**

19 **AND GRANTS.**

20 Not later than 30 days after the date of enactment  
21 of this Act, the Secretary, acting through the Director of  
22 the Building Technologies Office of the Department of  
23 Energy, shall issue a notice that includes—

24 (1) criteria established under section 1512 for  
25 approval by the Secretary of courses for which cred-



1 its may be issued for purposes of a HOPE Qualifica-  
2 tion;

3 (2) a list of courses that meet such criteria and  
4 are so approved; and

5 (3) information on how individuals and entities  
6 may apply for grants under this part.

7 **SEC. 1512. COURSE CRITERIA.**

8 (a) HOPE TRAINING TASK CREDIT.—

9 (1) CRITERIA.—The Secretary shall establish  
10 criteria for approval of a course for which a credit,  
11 to be known as a HOPE training task credit, may  
12 be issued, including that such course—

13 (A) is equivalent to at least 30 hours in  
14 total course time;

15 (B) is accredited by the Interstate Renew-  
16 able Energy Council or is determined to be  
17 equivalent by the Secretary;

18 (C) is, with respect to a particular job,  
19 aligned with the relevant National Renewable  
20 Energy Laboratory Job Task Analysis, or other  
21 credentialing program foundation that helps  
22 identify the necessary core knowledge areas,  
23 critical work functions, or skills, as approved by  
24 the Secretary;

1 (D) has established learning objectives;  
2 and

3 (E) includes, as the Secretary determines  
4 appropriate, an appropriate assessment of such  
5 learning objectives that may include a final  
6 exam, to be proctored on-site or through remote  
7 proctoring, or an in-person field exam.

8 (2) INCLUDED COURSES.—The Secretary shall  
9 approve one or more courses that meet the criteria  
10 described in paragraph (1) for training related to—

11 (A) contractor certification;

12 (B) energy auditing or assessment;

13 (C) home energy systems (including HVAC  
14 systems);

15 (D) insulation installation and air leakage  
16 control;

17 (E) health and safety regarding the instal-  
18 lation of energy efficiency measures or health  
19 and safety impacts associated with energy effi-  
20 ciency retrofits; and

21 (F) indoor air quality.

22 (b) HOPE TRAINING SUPPLEMENTAL CREDIT CRI-  
23 TERIA.—The Secretary shall establish criteria for approval  
24 of a course for which a credit, to be known as a HOPE

1 training supplemental credit, may be issued, including  
2 that such course provides—

3 (1) training related to—

4 (A) small business success, including man-  
5 agement, home energy efficiency software, or  
6 general accounting principles;

7 (B) the issuance of a home valuation cer-  
8 tification;

9 (C) the use of wifi-enabled technology in  
10 an energy efficiency upgrade; or

11 (D) understanding and being able to par-  
12 ticipate in the Home Energy Savings Retrofit  
13 Rebate Program; and

14 (2) as the Secretary determines appropriate, an  
15 appropriate assessment of such training that may in-  
16 clude a final exam, to be proctored on-site or  
17 through remote proctoring, or an in-person field  
18 exam.

19 (c) EXISTING APPROVED COURSES.—The Secretary  
20 may approve a course that meets the applicable criteria  
21 established under this section that is approved by the ap-  
22 plicable State energy office or relevant State agency with  
23 oversight authority for residential energy efficiency pro-  
24 grams.

1 (d) IN-PERSON AND ONLINE TRAINING.—An online  
2 course approved pursuant to this section may be con-  
3 ducted in-person, but may not be offered exclusively in-  
4 person.

5 **SEC. 1513. HOPE QUALIFICATION.**

6 (a) ISSUANCE OF CREDITS.—

7 (1) IN GENERAL.—The Secretary, or an entity  
8 authorized by the Secretary pursuant to paragraph  
9 (2), may issue—

10 (A) a HOPE training task credit to any  
11 individual that completes a course that meets  
12 applicable criteria under section 1512; and

13 (B) a HOPE training supplemental credit  
14 to any individual that completes a course that  
15 meets the applicable criteria under section  
16 1512.

17 (2) OTHER ENTITIES.—The Secretary may au-  
18 thorize a State energy office implementing an au-  
19 thorized program under subsection (b)(2), an organi-  
20 zation described in section 1514(b), and any other  
21 entity the Secretary determines appropriate, to issue  
22 HOPE training credits in accordance with para-  
23 graph (1).

24 (b) HOPE QUALIFICATION.—

1           (1) IN GENERAL.—The Secretary may certify  
2           that an individual has achieved a qualification, to be  
3           known as a HOPE Qualification, that indicates that  
4           the individual has received at least 3 HOPE training  
5           credits, of which at least 2 shall be HOPE training  
6           task credits.

7           (2) STATE PROGRAMS.—The Secretary may au-  
8           thorize a State energy office to implement a pro-  
9           gram to provide HOPE Qualifications in accordance  
10          with this part.

11 **SEC. 1514. GRANTS.**

12          (a) IN GENERAL.—The Secretary shall, to the extent  
13          amounts are made available in appropriations Acts for  
14          such purposes, provide grants to support the training of  
15          individuals toward the completion of a HOPE Qualifica-  
16          tion.

17          (b) PROVIDER ORGANIZATIONS.—

18               (1) IN GENERAL.—The Secretary may provide a  
19               grant of up to \$20,000 under this section to an or-  
20               ganization to provide training online, including es-  
21               tablishing, modifying, or maintaining the online sys-  
22               tems, staff time, and software and online program  
23               management, through a course that meets the appli-  
24               cable criteria established under section 1512.

1           (2) CRITERIA.—In order to receive a grant  
2       under this subsection, an organization shall be—

3                   (A) a nonprofit organization;

4                   (B) an educational institution; or

5                   (C) an organization that has experience  
6       providing training to contractors that work with  
7       the weatherization assistance program imple-  
8       mented under part A of title IV of the Energy  
9       Conservation and Production Act (42 U.S.C.  
10      6861 et seq.) or equivalent experience, as deter-  
11     mined by the Secretary.

12           (3) ADDITIONAL CERTIFICATIONS.—In addition  
13     to any grant provided under paragraph (1), the Sec-  
14     retary may provide an organization up to \$5,000 for  
15     each additional course for which a HOPE training  
16     credit may be issued that is offered by the organiza-  
17     tion.

18           (c) CONTRACTOR COMPANY.—The Secretary may  
19     provide a grant under this section of \$1,000 per employee  
20     to a contractor company, up to a maximum of \$10,000,  
21     to reimburse the contractor company for training costs for  
22     employees, and any home technology support needed for  
23     an employee to receive training pursuant to this section.  
24     Grant funds provided under this subsection may be used  
25     to support wages of employees during training.

1 (d) TRAINEES.—The Secretary may provide a grant  
2 of up to \$1,000 under this section to an individual who  
3 receives a HOPE Qualification.

4 (e) STATE ENERGY OFFICE.—The Secretary may  
5 provide a grant under this section to a State energy office  
6 of up to \$25,000 to implement an authorized program  
7 under section 1513(b).

8 **SEC. 1515. AUTHORIZATION OF APPROPRIATIONS.**

9 There is authorized to be appropriated to carry out  
10 this part \$500,000,000 for the period of fiscal years 2021  
11 through 2025, to remain available until expended.

12 **PART 2—HOME ENERGY SAVINGS RETROFIT**  
13 **REBATE PROGRAM**

14 **SEC. 1521. ESTABLISHMENT OF HOME ENERGY SAVINGS**  
15 **RETROFIT REBATE PROGRAM.**

16 The Secretary shall establish a program, to be known  
17 as the Home Energy Savings Retrofit Rebate Program,  
18 to—

19 (1) provide rebates in accordance with section  
20 1522; and

21 (2) provide grants to States to carry out pro-  
22 grams to provide rebates in accordance with section  
23 1523.

1 **SEC. 1522. PARTIAL SYSTEM REBATES.**

2 (a) AMOUNT OF REBATE.—In carrying out the Home  
3 Energy Savings Retrofit Rebate Program, and subject to  
4 the availability of appropriations for such purpose, the  
5 Secretary shall provide a homeowner a rebate, to be known  
6 as a partial system rebate, of, except as provided in section  
7 1524, up to—

8 (1) \$800 for the purchase and installation of  
9 insulation and air sealing within a home of the  
10 homeowner; and

11 (2) \$1,500 for the purchase and installation of  
12 insulation and air sealing within a home of the  
13 homeowner and replacement of an HVAC system,  
14 the heating component of an HVAC system, or the  
15 cooling component of an HVAC system, of such  
16 home.

17 (b) SPECIFICATIONS.—

18 (1) COST.—The amount of a partial system re-  
19 bate provided under this section shall, except as pro-  
20 vided in section 1524, not exceed 30 percent of cost  
21 of the purchase and installation of insulation and air  
22 sealing under subsection (a)(1), or the purchase and  
23 installation of insulation and air sealing and replace-  
24 ment of an HVAC system, the heating component of  
25 an HVAC system, or the cooling component of an



1 HVAC system, under subsection (a)(2). Labor may  
2 be included in such cost but may not exceed—

3 (A) in the case of a rebate under sub-  
4 section (a)(1), 50 percent of such cost; and

5 (B) in the case of a rebate under sub-  
6 section (a)(2), 25 percent of such cost.

7 (2) REPLACEMENT OF AN HVAC SYSTEM, THE  
8 HEATING COMPONENT OF AN HVAC SYSTEM, OR THE  
9 COOLING COMPONENT OF AN HVAC SYSTEM.—In  
10 order to qualify for a partial system rebate described  
11 in subsection (a)(2)—

12 (A) any HVAC system, heating component  
13 of an HVAC system, or cooling component of  
14 an HVAC system installed shall be Energy Star  
15 Most Efficient certified;

16 (B) installation of such an HVAC system,  
17 the heating component of an HVAC system, or  
18 the cooling component of an HVAC system,  
19 shall be completed in accordance with standards  
20 specified by the Secretary that are at least as  
21 stringent as the applicable guidelines of the Air  
22 Conditioning Contractors of America that are in  
23 effect on the date of enactment of this Act;

24 (C) if ducts are present, replacement of an  
25 HVAC system, the heating component of an

1 HVAC system, or the cooling component of an  
2 HVAC system shall include duct sealing; and

3 (D) the installation of insulation and air  
4 sealing shall occur within 6 months of the re-  
5 placement of the HVAC system, the heating  
6 component of an HVAC system, or the cooling  
7 component of an HVAC system.

8 (c) ADDITIONAL INCENTIVES FOR CONTRACTORS.—

9 In carrying out the Home Energy Savings Retrofit Rebate  
10 Program, the Secretary may provide a \$250 payment to  
11 a contractor per home for which—

12 (1) a partial system rebate is provided under  
13 this section for the installation of insulation and air  
14 sealing, or installation of insulation and air sealing  
15 and replacement of an HVAC system, the heating  
16 component of an HVAC system, or the cooling com-  
17 ponent of an HVAC system, by the contractor;

18 (2) the applicable homeowner has signed and  
19 submitted to the Secretary a release form made  
20 available pursuant to section 1526(b) authorizing  
21 the contractor access to information in the utility  
22 bills of the homeowner; and

23 (3) the contractor inputs, into the Department  
24 of Energy's Building Performance Database—

1 (A) the energy usage for the home for the  
2 12 months preceding, and the 24 months fol-  
3 lowing, the installation of insulation and air  
4 sealing or installation of insulation and air seal-  
5 ing and replacement of an HVAC system, the  
6 heating component of an HVAC system, or the  
7 cooling component of an HVAC system;

8 (B) a description of such installation or in-  
9 stallation and replacement; and

10 (C) the total cost to the homeowner for  
11 such installation or installation and replace-  
12 ment.

13 (d) PROCESS.—

14 (1) FORMS; REBATE PROCESSING SYSTEM.—  
15 Not later than 90 days after the date of enactment  
16 of this Act, the Secretary, in consultation with the  
17 Secretary of the Treasury, shall—

18 (A) develop and make available rebate  
19 forms required to receive a partial system re-  
20 bate under this section;

21 (B) establish a Federal rebate processing  
22 system which shall serve as a database and in-  
23 formation technology system that will allow  
24 homeowners to submit required rebate forms;  
25 and

1 (C) establish a website that provides infor-  
2 mation on partial system rebates provided  
3 under this section, including how to determine  
4 whether particular measures qualify for a re-  
5 bate under this section and how to receive such  
6 a rebate.

7 (2) SUBMISSION OF FORMS.—In order to re-  
8 ceive a partial system rebate under this section, a  
9 homeowner shall submit the required rebate forms,  
10 and any other information the Secretary determines  
11 appropriate, to the Federal rebate processing system  
12 established pursuant to paragraph (1).

13 (e) FUNDING.—

14 (1) LIMITATION.—For each fiscal year, the Sec-  
15 retary may not use more than 50 percent of the  
16 amounts made available to carry out this part to  
17 carry out this section.

18 (2) ALLOCATION.—The Secretary shall allocate  
19 amounts made available to carry out this section for  
20 partial system rebates among the States using the  
21 same formula as is used to allocate funds for States  
22 under part D of title III of the Energy Policy and  
23 Conservation Act (42 U.S.C. 6321 et seq.).

1 **SEC. 1523. STATE ADMINISTERED REBATES.**

2 (a) **FUNDING.**—In carrying out the Home Energy  
3 Savings Retrofit Rebate Program, and subject to the  
4 availability of appropriations for such purpose, the Sec-  
5 retary shall provide grants to States to carry out programs  
6 to provide rebates in accordance with this section.

7 (b) **STATE PARTICIPATION.**—

8 (1) **PLAN.**—In order to receive a grant under  
9 this section a State shall submit to the Secretary an  
10 application that includes a plan to implement a  
11 State program that meets the minimum criteria  
12 under subsection (c).

13 (2) **APPROVAL.**—Not later than 60 days after  
14 receipt of a completed application for a grant under  
15 this section, the Secretary shall either approve the  
16 application or provide to the applicant an expla-  
17 nation for denying the application.

18 (c) **MINIMUM CRITERIA FOR STATE PROGRAMS.**—  
19 Not later than 6 months after the date of enactment of  
20 this Act, the Secretary shall establish and publish min-  
21 imum criteria for a State program to meet to qualify for  
22 funding under this section, including—

23 (1) that the State program be carried out by  
24 the applicable State energy office or its designee;

1           (2) that a rebate be provided under a State pro-  
2       gram only for a home energy efficiency retrofit  
3       that—

4           (A) is completed by a contractor who  
5       meets minimum training requirements and cer-  
6       tification requirements set forth by the Sec-  
7       retary;

8           (B) includes installation of one or more  
9       home energy efficiency retrofit measures for a  
10      home that together are modeled to achieve, or  
11      are shown to achieve, a reduction in home en-  
12      ergy use of 20 percent or more from the base-  
13      line energy use of the home;

14          (C) does not include installation of any  
15      measure that the Secretary determines does not  
16      improve the thermal energy performance of the  
17      home, such as a pool pump, pool heater, spa, or  
18      EV charger; and

19          (D) includes, after installation of the appli-  
20      cable home energy efficiency retrofit measures,  
21      a test-out procedure conducted in accordance  
22      with guidelines issued by the Secretary of such  
23      measures to ensure—

24              (i) the safe operation of all systems  
25              post retrofit; and

1 (ii) that all improvements are included  
2 in, and have been installed according to—

3 (I) manufacturers installation  
4 specifications; and

5 (II) all applicable State and local  
6 codes or equivalent standards ap-  
7 proved by the Secretary;

8 (3) that the State program utilize—

9 (A) for purposes of modeled performance  
10 rebates, modeling software approved by the Sec-  
11 retary for determining and documenting the  
12 baseline energy use of a home and the reduc-  
13 tions in home energy use resulting from the im-  
14 plementation of a home energy efficiency ret-  
15 rofit; and

16 (B) for purposes of measured performance  
17 rebates, methods and procedures approved by  
18 the Secretary for determining and documenting  
19 the baseline energy use of a home and the re-  
20 ductions in home energy use resulting from the  
21 implementation of a home energy efficiency ret-  
22 rofit, including methods and procedures for use  
23 of advanced metering infrastructure, weather-  
24 normalized data, and open source standards, to

1 measure such baseline energy use and such re-  
2 ductions in home energy use;

3 (4) that the State program include implementa-  
4 tion of a quality assurance program—

5 (A) to ensure that home energy efficiency  
6 retrofits are achieving the stated level of energy  
7 savings, that efficiency measures were installed  
8 correctly, and that work is performed in accord-  
9 ance with procedures developed by the Sec-  
10 retary, including through quality-control inspec-  
11 tions for a portion of home energy efficiency  
12 retrofits completed by each applicable con-  
13 tractor; and

14 (B) under which a quality-control inspec-  
15 tion of a home energy efficiency retrofit is per-  
16 formed by a quality assurance provider who—

17 (i) is independent of the contractor  
18 for such retrofit; and

19 (ii) will confirm that such contractor  
20 is a contractor who meets minimum train-  
21 ing requirements and certification require-  
22 ments set forth by the Secretary;

23 (5) that the State program include require-  
24 ments for a homeowner, contractor, or rebate  
25 aggregator to claim a rebate, including that the



1 homeowner, contractor, or rebate aggregator submit  
2 any applicable forms approved by the Secretary to  
3 the State, including a copy of the certificate pro-  
4 vided by the applicable contractor certifying pro-  
5 jected or measured reduction of home energy use;

6 (6) that the State program may include require-  
7 ments for an entity to be eligible to serve as a rebate  
8 aggregator to facilitate the delivery of rebates to  
9 homeowners or contractors;

10 (7) that the State program include procedures  
11 for a homeowner to transfer the right to claim a re-  
12 bate to the contractor performing the applicable  
13 home energy efficiency retrofit or to a rebate  
14 aggregator that works with the contractor; and

15 (8) that the State program provide that a  
16 homeowner, contractor, or rebate aggregator may  
17 claim more than one rebate under the State pro-  
18 gram, and may claim a rebate under the State pro-  
19 gram after receiving a partial system rebate under  
20 section 1522, provided that no 2 rebates may be  
21 provided with respect to a home using the same  
22 baseline energy use of such home.

23 (d) MODELED PERFORMANCE REBATES.—

24 (1) IN GENERAL.—In carrying out a State pro-  
25 gram under this section, a State may provide a

1 homeowner, contractor, or rebate aggregator a re-  
2 bate, to be known as a modeled performance rebate,  
3 for an energy audit of a home and a home energy  
4 efficiency retrofit that is projected, using modeling  
5 software approved by the Secretary, to reduce home  
6 energy use by at least 20 percent.

7 (2) AMOUNT.—

8 (A) IN GENERAL.—Except as provided in  
9 section 1524, and subject to subparagraph (B),  
10 the amount of a modeled performance rebate  
11 provided under a State program shall be equal  
12 to 50 percent of the cost of the applicable en-  
13 ergy audit of a home and home energy effi-  
14 ciency retrofit, including the cost of diagnostic  
15 procedures, labor, reporting, and modeling.

16 (B) LIMITATION.—Except as provided in  
17 section 1524, with respect to an energy audit  
18 and home energy efficiency retrofit that is pro-  
19 jected to reduce home energy use by—

20 (i) at least 20 percent, but less than  
21 40 percent, the maximum amount of a  
22 modeled performance rebate shall be  
23 \$2,000; and

1 (ii) at least 40 percent, the maximum  
2 amount of a modeled performance rebate  
3 shall be \$4,000.

4 (e) MEASURED PERFORMANCE REBATES.—

5 (1) IN GENERAL.—In carrying out a State pro-  
6 gram under this section, a State may provide a  
7 homeowner, contractor, or rebate aggregator a re-  
8 bate, to be known as a measured performance re-  
9 bate, for a home energy efficiency retrofit that re-  
10 duces home energy use by at least 20 percent as  
11 measured using methods and procedures approved  
12 by the Secretary.

13 (2) AMOUNT.—

14 (A) IN GENERAL.—Except as provided in  
15 section 1524, and subject to subparagraph (B),  
16 the amount of a measured performance rebate  
17 provided under a State program shall be equal  
18 to 50 percent of the cost, including the cost of  
19 diagnostic procedures, labor, reporting, and en-  
20 ergy measurement, of the applicable home en-  
21 ergy efficiency retrofit.

22 (B) LIMITATION.—Except as provided in  
23 section 1524, with respect to a home energy ef-  
24 ficiency retrofit that is measured as reducing  
25 home energy use by—

1 (i) at least 20 percent, but less than  
2 40 percent, the maximum amount of a  
3 measured performance rebate shall be  
4 \$2,000; and

5 (ii) at least 40 percent, the maximum  
6 amount of a measured performance rebate  
7 shall be \$4,000.

8 (f) COORDINATION OF REBATE AND EXISTING  
9 STATE-SPONSORED OR UTILITY-SPONSORED PRO-  
10 GRAMS.—A State that receives a grant under this section  
11 is encouraged to work with State agencies, energy utilities,  
12 nonprofits, and other entities—

13 (1) to assist in marketing the availability of the  
14 rebates under the applicable State program;

15 (2) to coordinate with utility or State managed  
16 financing programs;

17 (3) to assist in implementation of the applicable  
18 State program, including installation of home energy  
19 efficiency retrofits; and

20 (4) to coordinate with existing quality assur-  
21 ance programs.

22 (g) ADMINISTRATION AND OVERSIGHT.—

23 (1) REVIEW OF APPROVED MODELING SOFT-  
24 WARE.—The Secretary shall, on an annual basis, list  
25 and review all modeling software approved for use in

1 determining and documenting the reductions in  
2 home energy use for purposes of modeled perform-  
3 ance rebates under subsection (d). In approving such  
4 modeling software each year, the Secretary shall en-  
5 sure that modeling software approved for a year will  
6 result in modeling of energy efficiency gains for any  
7 type of home energy efficiency retrofit that is at  
8 least as substantial as the modeling of energy effi-  
9 ciency gains for such type of home energy efficiency  
10 retrofit using the modeling software approved for  
11 the previous year.

12 (2) OVERSIGHT.—If the Secretary determines  
13 that a State is not implementing a State program  
14 that was approved pursuant to subsection (b) and  
15 that meets the minimum criteria under subsection  
16 (c), the Secretary may, after providing the State a  
17 period of at least 90 days to meet such criteria,  
18 withhold grant funds under this section from the  
19 State.

20 **SEC. 1524. SPECIAL PROVISIONS FOR MODERATE INCOME**  
21 **HOUSEHOLDS.**

22 (a) CERTIFICATIONS.—The Secretary shall establish  
23 procedures for certifying that the household of a home-  
24 owner is moderate income for purposes of this section.

1 (b) PERCENTAGES.—Subject to subsection (c), for  
2 households of homeowners that are certified pursuant to  
3 the procedures established under subsection (a) as mod-  
4 erate income the—

5 (1) amount of a partial system rebate under  
6 section 1522 shall not exceed 60 percent of the ap-  
7 plicable purchase and installation costs described in  
8 section 1522(b)(1); and

9 (2) amount of—

10 (A) a modeled performance rebate under  
11 section 1523 provided shall be equal to 80 per-  
12 cent of the applicable costs described in section  
13 1523(d)(2)(A); and

14 (B) a measured performance rebate under  
15 section 1523 provided shall be equal to 80 per-  
16 cent of the applicable costs described in section  
17 1523(e)(2)(A).

18 (c) MAXIMUM AMOUNTS.—For households of home-  
19 owners that are certified pursuant to the procedures estab-  
20 lished under subsection (a) as moderate income the max-  
21 imum amount—

22 (1) of a partial system rebate—

23 (A) under section 1522(a)(1) for the pur-  
24 chase and installation of insulation and air seal-

1           ing within a home of the homeowner shall be  
2           \$1600; and

3                 (B) under section 1522(a)(2) for the pur-  
4           chase and installation of insulation and air seal-  
5           ing within a home of the homeowner and re-  
6           placement of an HVAC system, the heating  
7           component of an HVAC system, or the cooling  
8           component of an HVAC system, of such home,  
9           shall be \$3,000;

10           (2) of a modeled performance rebate under sec-  
11          tion 1523 for an energy audit and home energy effi-  
12          ciency retrofit that is projected to reduce home en-  
13          ergy use as described in—

14                 (A) section 1523(d)(2)(B)(i) shall be  
15           \$4,000; and

16                 (B) section 1523(d)(2)(B)(ii) shall be  
17           \$8,000; and

18           (3) of a measured performance rebate under  
19          section 1523 for a home energy efficiency retrofit  
20          that reduces home energy use as described in—

21                 (B) section 1523(e)(2)(B)(i) shall be  
22           \$4,000; and

23                 (C) section 1523(e)(2)(B)(ii) shall be  
24           \$8,000.

1 (d) OUTREACH.—The Secretary shall establish proce-  
2 dures to—

3 (1) provide information to households of home-  
4 owners that are certified pursuant to the procedures  
5 established under subsection (a) as moderate income  
6 regarding other programs and resources relating to  
7 assistance for energy efficiency upgrades of homes,  
8 including the weatherization assistance program im-  
9 plemented under part A of title IV of the Energy  
10 Conservation and Production Act (42 U.S.C. 6861  
11 et seq.); and

12 (2) refer such households, as applicable, to such  
13 other programs and resources.

14 **SEC. 1525. EVALUATION REPORTS TO CONGRESS.**

15 (a) IN GENERAL.—Not later than 3 years after the  
16 date of enactment of this Act and annually thereafter until  
17 the termination of the Home Energy Savings Retrofit Re-  
18 bate Program, the Secretary shall submit to Congress a  
19 report on the use of funds made available to carry out  
20 this part.

21 (b) CONTENTS.—Each report submitted under sub-  
22 section (a) shall include—

23 (1) how many home energy efficiency retrofits  
24 have been completed during the previous year under  
25 the Home Energy Savings Retrofit Rebate Program;



1           (2) an estimate of how many jobs have been  
2           created through the Home Energy Savings Retrofit  
3           Rebate Program, directly and indirectly;

4           (3) a description of what steps could be taken  
5           to promote further deployment of energy efficiency  
6           and renewable energy retrofits;

7           (4) a description of the quantity of verifiable  
8           energy savings, homeowner energy bill savings, and  
9           other benefits of the Home Energy Savings Retrofit  
10          Rebate Program;

11          (5) a description of any waste, fraud, or abuse  
12          with respect to funds made available to carry out  
13          this part; and

14          (6) any other information the Secretary con-  
15          siders appropriate.

16 **SEC. 1526. ADMINISTRATION.**

17          (a) IN GENERAL.—The Secretary shall provide such  
18          administrative and technical support to contractors, rebate  
19          aggregators, States, and Indian Tribes as is necessary to  
20          carry out this part.

21          (b) INFORMATION COLLECTION.—The Secretary  
22          shall establish, and make available to a homeowner, or the  
23          homeowner's designated representative, seeking a rebate  
24          under this part, release forms authorizing access by the  
25          Secretary, or a designated third-party representative to in-

1 formation in the utility bills of the homeowner with appro-  
2 priate privacy protections in place.

3 **SEC. 1527. AUTHORIZATION OF APPROPRIATIONS.**

4 (a) IN GENERAL.—There are authorized to be appro-  
5 priated to the Secretary to carry out this part  
6 \$1,200,000,000 for each of fiscal years 2021 through  
7 2025, to remain available until expended.

8 (b) TRIBAL ALLOCATION.—Of the amounts made  
9 available pursuant to subsection (a) for a fiscal year, the  
10 Secretary shall work with Indian Tribes and use 2 percent  
11 of such amounts to carry out a program or programs that  
12 as close as possible reflect the goals, requirements, and  
13 provisions of this part, taking into account any factors  
14 that the Secretary determines to be appropriate.

15 **PART 3—GENERAL PROVISIONS**

16 **SEC. 1531. APPOINTMENT OF PERSONNEL.**

17 Notwithstanding the provisions of title 5, United  
18 States Code, regarding appointments in the competitive  
19 service and General Schedule classifications and pay rates,  
20 the Secretary may appoint such professional and adminis-  
21 trative personnel as the Secretary considers necessary to  
22 carry out this subtitle.

23 **SEC. 1532. MAINTENANCE OF FUNDING.**

24 Each State receiving Federal funds pursuant to this  
25 subtitle shall provide reasonable assurances to the Sec-

1   retary that it has established policies and procedures de-  
2   signed to ensure that Federal funds provided under this  
3   subtitle will be used to supplement, and not to supplant,  
4   State and local funds.

## 5           **Subtitle F—Weatherization**

### 6   **SEC. 1601. WEATHERIZATION ASSISTANCE PROGRAM.**

7           (a) REAUTHORIZATION OF WEATHERIZATION AS-  
8   SISTANCE PROGRAM.—Section 422 of the Energy Con-  
9   servation and Production Act (42 U.S.C. 6872) is amend-  
10   ed by striking paragraphs (1) through (5) and inserting  
11   the following:

12               “(1) \$310,000,000 for fiscal year 2021;

13               “(2) \$330,000,000 for fiscal year 2022;

14               “(3) \$350,000,000 for fiscal year 2023;

15               “(4) \$350,000,000 for fiscal year 2024; and

16               “(5) \$350,000,000 for fiscal year 2025.”.

17           (b) MODERNIZING THE DEFINITION OF WEATHER-  
18   IZATION MATERIALS.—Section 412(9)(J) of the Energy  
19   Conservation and Production Act (42 U.S.C. 6862(9)(J))  
20   is amended—

21               (1) by inserting “, including renewable energy  
22   technologies and other advanced technologies,” after  
23   “devices or technologies”; and

24               (2) by striking “, after consulting with the Sec-  
25   retary of Housing and Urban Development, the Sec-

1       retary of Agriculture, and the Director of the Com-  
2       munity Services Administration”.

3       (c) CONSIDERATION OF HEALTH BENEFITS.—Sec-  
4       tion 413(b) of the Energy Conservation and Production  
5       Act (42 U.S.C. 6863(b)) is amended—

6               (1) in paragraph (1), by striking “Health, Edu-  
7       cation, and Welfare” and inserting “Health and  
8       Human Services”;

9               (2) in paragraph (2)(A), by striking “Health,  
10       Education, and Welfare” and inserting “Health and  
11       Human Services”;

12              (3) in paragraph (3)—

13                   (A) by striking “and with the Director of  
14       the Community Services Administration”;

15                   (B) by inserting “and by” after “in car-  
16       rying out this part,”; and

17                   (C) by striking “, and the Director of the  
18       Community Services Administration in carrying  
19       out weatherization programs under section  
20       222(a)(12) of the Economic Opportunity Act of  
21       1964”;

22              (4) by redesignating paragraphs (4) through  
23       (6) as paragraphs (5) through (7), respectively; and

24              (5) by inserting after paragraph (3), the fol-  
25       lowing:

1       “(4) The Secretary may amend the regulations pre-  
2       scribed under paragraph (1) to provide that the standards  
3       described in paragraph (2)(A) take into consideration im-  
4       provements in the health and safety of occupants of dwell-  
5       ing units, and other non-energy benefits, from weatheriza-  
6       tion.”.

7       (d) CONTRACTOR OPTIMIZATION.—

8               (1) IN GENERAL.—The Energy Conservation  
9       and Production Act is amended by inserting after  
10      section 414B (42 U.S.C. 6864b) the following:

11   **“SEC. 414C. CONTRACTOR OPTIMIZATION.**

12       “(a) IN GENERAL.—The Secretary may request that  
13      entities receiving funding from the Federal Government  
14      or from a State through a weatherization assistance pro-  
15      gram under section 413 or section 414 perform periodic  
16      reviews of the use of private contractors in the provision  
17      of weatherization assistance, and encourage expanded use  
18      of contractors as appropriate.

19       “(b) USE OF TRAINING FUNDS.—Entities described  
20      in subsection (a) may use funding described in such sub-  
21      section to train private, non-Federal entities that are con-  
22      tracted to provide weatherization assistance under a  
23      weatherization program, in accordance with rules deter-  
24      mined by the Secretary.”.

1           (2) TABLE OF CONTENTS AMENDMENT.—The  
2       table of contents for the Energy Conservation and  
3       Production Act is amended by inserting after the  
4       item relating to section 414B the following:

“Sec. 414C. Contractor optimization.”.

5       (e) FINANCIAL ASSISTANCE FOR WAP ENHANCE-  
6       MENT AND INNOVATION.—

7           (1) IN GENERAL.—The Energy Conservation  
8       and Production Act is amended by inserting after  
9       section 414C (as added by subsection (d) of this sec-  
10      tion) the following:

11   **“SEC. 414D. FINANCIAL ASSISTANCE FOR WAP ENHANCE-**  
12       **MENT AND INNOVATION.**

13       “(a) PURPOSES.—The purposes of this section are—

14           “(1) to expand the number of dwelling units  
15       that are occupied by low-income persons that receive  
16       weatherization assistance by making such dwelling  
17       units weatherization-ready;

18           “(2) to promote the deployment of renewable  
19       energy in dwelling units that are occupied by low-in-  
20       come persons;

21           “(3) to ensure healthy indoor environments by  
22       enhancing or expanding health and safety measures  
23       and resources available to dwellings that are occu-  
24       pied by low-income persons;

1 “(4) to disseminate new methods and best prac-  
2 tices among entities providing weatherization assist-  
3 ance; and

4 “(5) to encourage entities providing weatheriza-  
5 tion assistance to hire and retain employees who are  
6 individuals—

7 “(A) from the community in which the as-  
8 sistance is provided; and

9 “(B) from communities or groups that are  
10 underrepresented in the home energy perform-  
11 ance workforce, including religious and ethnic  
12 minorities, women, veterans, individuals with  
13 disabilities, and individuals who are  
14 socioeconomically disadvantaged.

15 “(b) FINANCIAL ASSISTANCE.—The Secretary shall,  
16 to the extent funds are made available, award financial  
17 assistance, on an annual basis, through a competitive  
18 process to entities receiving funding from the Federal Gov-  
19 ernment or from a State, tribal organization, or unit of  
20 general purpose local government through a weatheriza-  
21 tion program under section 413 or section 414, or to non-  
22 profit entities, to be used by such an entity—

23 “(1) with respect to dwelling units that are oc-  
24 cupied by low-income persons, to—

1           “(A) implement measures to make such  
2 dwelling units weatherization-ready by address-  
3 ing structural, plumbing, roofing, and electrical  
4 issues, environmental hazards, or other meas-  
5 ures that the Secretary determines to be appro-  
6 priate;

7           “(B) install energy efficiency technologies,  
8 including home energy management systems,  
9 smart devices, and other technologies the Sec-  
10 retary determines to be appropriate;

11           “(C) install renewable energy systems (as  
12 defined in section 415(c)(6)(A)); and

13           “(D) implement measures to ensure  
14 healthy indoor environments by improving in-  
15 door air quality, accessibility, and other healthy  
16 homes measures as determined by the Sec-  
17 retary;

18           “(2) to improve the capability of the entity—

19           “(A) to significantly increase the number  
20 of energy retrofits performed by such entity;

21           “(B) to replicate best practices for work  
22 performed pursuant to this section on a larger  
23 scale;

24           “(C) to leverage additional funds to sus-  
25 tain the provision of weatherization assistance



1 and other work performed pursuant to this sec-  
2 tion after financial assistance awarded under  
3 this section is expended; and

4 “(D) to hire and retain employees who are  
5 individuals described subsection (a)(5);

6 “(3) for innovative outreach and education re-  
7 garding the benefits and availability of weatheriza-  
8 tion assistance and other assistance available pursu-  
9 ant to this section;

10 “(4) for quality control of work performed pur-  
11 suant to this section;

12 “(5) for data collection, measurement, and  
13 verification with respect to such work;

14 “(6) for program monitoring, oversight, evalua-  
15 tion, and reporting regarding such work;

16 “(7) for labor, training, and technical assist-  
17 ance relating to such work;

18 “(8) for planning, management, and adminis-  
19 tration (up to a maximum of 15 percent of the as-  
20 sistance provided); and

21 “(9) for such other activities as the Secretary  
22 determines to be appropriate.

23 “(c) AWARD FACTORS.—In awarding financial assist-  
24 ance under this section, the Secretary shall consider—

1           “(1) the applicant’s record of constructing, ren-  
2           ovating, repairing, or making energy efficient single-  
3           family, multifamily, or manufactured homes that are  
4           occupied by low-income persons, either directly or  
5           through affiliates, chapters, or other partners (using  
6           the most recent year for which data are available);

7           “(2) the number of dwelling units occupied by  
8           low-income persons that the applicant has built, ren-  
9           ovated, repaired, weatherized, or made more energy  
10          efficient in the 5 years preceding the date of the ap-  
11          plication;

12          “(3) the qualifications, experience, and past  
13          performance of the applicant, including experience  
14          successfully managing and administering Federal  
15          funds;

16          “(4) the strength of an applicant’s proposal to  
17          achieve one or more of the purposes under sub-  
18          section (a);

19          “(5) the extent to which such applicant will uti-  
20          lize partnerships and regional coordination to  
21          achieve one or more of the purposes under sub-  
22          section (a);

23          “(6) regional and climate zone diversity;

24          “(7) urban, suburban, and rural localities; and

1           “(8) such other factors as the Secretary deter-  
2           mines to be appropriate.

3           “(d) APPLICATIONS.—

4           “(1) ADMINISTRATION.—To be eligible for an  
5           award of financial assistance under this section, an  
6           applicant shall submit to the Secretary an applica-  
7           tion in such manner and containing such informa-  
8           tion as the Secretary may require.

9           “(2) AWARDS.—Subject to the availability of  
10          appropriations, not later than 270 days after the  
11          date of enactment of this section, the Secretary shall  
12          make a first award of financial assistance under this  
13          section.

14          “(e) MAXIMUM AMOUNT AND TERM.—

15          “(1) IN GENERAL.—The total amount of finan-  
16          cial assistance awarded to an entity under this sec-  
17          tion shall not exceed \$2,000,000.

18          “(2) TECHNICAL AND TRAINING ASSISTANCE.—  
19          The total amount of financial assistance awarded to  
20          an entity under this section shall be reduced by the  
21          cost of any technical and training assistance pro-  
22          vided by the Secretary that relates to such financial  
23          assistance.

1           “(3) TERM.—The term of an award of financial  
2       assistance under this section shall not exceed 3  
3       years.

4           “(4) RELATIONSHIP TO FORMULA GRANTS.—An  
5       entity may use financial assistance awarded to such  
6       entity under this section in conjunction with other  
7       financial assistance provided to such entity under  
8       this part.

9           “(f) REQUIREMENTS.—Not later than 90 days after  
10      the date of enactment of this section, the Secretary shall  
11      issue requirements to implement this section, including,  
12      for entities receiving financial assistance under this sec-  
13      tion—

14           “(1) standards for allowable expenditures;

15           “(2) a minimum saving-to-investment ratio; and

16           “(3) standards for—

17               “(A) training programs;

18               “(B) energy audits;

19               “(C) the provision of technical assistance;

20               “(D) monitoring activities carried out  
21      using such financial assistance;

22               “(E) verification of energy and cost sav-  
23      ings;

24               “(F) liability insurance requirements; and

1           “(G) recordkeeping and reporting require-  
2           ments, which shall include reporting to the Of-  
3           fice of Weatherization and Intergovernmental  
4           Programs of the Department of Energy applica-  
5           ble data on each dwelling unit retrofitted or  
6           otherwise assisted pursuant to this section.

7           “(g) COMPLIANCE WITH STATE AND LOCAL LAW.—  
8           Nothing in this section supersedes or otherwise affects any  
9           State or local law, to the extent that the State or local  
10          law contains a requirement that is more stringent than  
11          the applicable requirement of this section.

12          “(h) REVIEW AND EVALUATION.—The Secretary  
13          shall review and evaluate the performance of each entity  
14          that receives an award of financial assistance under this  
15          section (which may include an audit).

16          “(i) ANNUAL REPORT.—The Secretary shall submit  
17          to Congress an annual report that provides a description  
18          of—

19                 “(1) actions taken under this section to achieve  
20                 the purposes of this section; and

21                 “(2) accomplishments as a result of such ac-  
22                 tions, including energy and cost savings achieved.

23          “(j) FUNDING.—

24                 “(1) AMOUNTS.—

1           “(A) IN GENERAL.—For each of fiscal  
2           years 2021 through 2025, of the amount made  
3           available under section 422 for such fiscal year  
4           to carry out the weatherization program under  
5           this part (not including any of such amount  
6           made available for Department of Energy head-  
7           quarters training or technical assistance), not  
8           more than—

9                   “(i) 2 percent of such amount (if such  
10           amount is \$225,000,000 or more but less  
11           than \$260,000,000) may be used to carry  
12           out this section;

13                   “(ii) 4 percent of such amount (if  
14           such amount is \$260,000,000 or more but  
15           less than \$300,000,000) may be used to  
16           carry out this section; and

17                   “(iii) 6 percent of such amount (if  
18           such amount is \$300,000,000 or more)  
19           may be used to carry out this section.

20           “(B) MINIMUM.—For each of fiscal years  
21           2021 through 2025, if the amount made avail-  
22           able under section 422 (not including any of  
23           such amount made available for Department of  
24           Energy headquarters training or technical as-  
25           sistance) for such fiscal year is less than

1           \$225,000,000, no funds shall be made available  
2           to carry out this section.

3           “(2) LIMITATION.—For any fiscal year, the  
4           Secretary may not use more than \$25,000,000 of  
5           the amount made available under section 422 to  
6           carry out this section.

7           “(k) TERMINATION.—The Secretary may not award  
8           financial assistance under this section after September 30,  
9           2025.”.

10           (2) TABLE OF CONTENTS.—The table of con-  
11           tents for the Energy Conservation and Production  
12           Act is amended by inserting after the item relating  
13           to section 414C the following:

“Sec. 414D. Financial assistance for WAP enhancement and innovation.”.

14           (f) HIRING.—

15           (1) IN GENERAL.—The Energy Conservation  
16           and Production Act is amended by inserting after  
17           section 414D (as added by subsection (e) of this sec-  
18           tion) the following:

19           **“SEC. 414E. HIRING.**

20           “The Secretary may, as the Secretary determines ap-  
21           propriate, encourage entities receiving funding from the  
22           Federal Government or from a State through a weather-  
23           ization program under section 413 or section 414, to  
24           prioritize the hiring and retention of employees who are  
25           individuals described in section 414D(a)(5).”.

1           (2) TABLE OF CONTENTS.—The table of con-  
2           tents for the Energy Conservation and Production  
3           Act is amended by inserting after the item relating  
4           to section 414D the following:

“Sec. 414E. Hiring.”.

5           (g) INCREASE IN ADMINISTRATIVE FUNDS.—Section  
6           415(a)(1) of the Energy Conservation and Production Act  
7           (42 U.S.C. 6865(a)(1)) is amended by striking “10 per-  
8           cent” and inserting “15 percent”.

9           (h) AMENDING RE-WEATHERIZATION DATE.—Para-  
10          graph (2) of section 415(c) of the Energy Conservation  
11          and Production Act (42 U.S.C. 6865(c)) is amended to  
12          read as follows:

13          “(2) Dwelling units weatherized (including dwelling  
14          units partially weatherized) under this part, or under  
15          other Federal programs (in this paragraph referred to as  
16          ‘previous weatherization’), may not receive further finan-  
17          cial assistance for weatherization under this part until the  
18          date that is 15 years after the date such previous weather-  
19          ization was completed. This paragraph does not preclude  
20          dwelling units that have received previous weatherization  
21          from receiving assistance and services (including the provi-  
22          sion of information and education to assist with energy  
23          management and evaluation of the effectiveness of in-  
24          stalled weatherization materials) other than weatheriza-  
25          tion under this part or under other Federal programs, or



1 from receiving non-Federal assistance for weatheriza-  
2 tion.”.

3 (i) ANNUAL REPORT.—Section 421 of the Energy  
4 Conservation and Production Act (42 U.S.C. 6871) is  
5 amended by inserting “the number of multifamily build-  
6 ings in which individual dwelling units were weatherized  
7 during the previous year, the number of individual dwell-  
8 ing units in multifamily buildings weatherized during the  
9 previous year,” after “the average size of the dwellings  
10 being weatherized,”.

11 **SEC. 1602. REPORT ON WAIVERS.**

12 Not later than 180 days after the date of enactment  
13 of this Act, the Secretary of Energy shall submit to Con-  
14 gress a report on the status of any request made after  
15 September 30, 2010, for a waiver of any requirement  
16 under section 200.313 of title 2, Code of Federal Regula-  
17 tions, as such requirement applies with respect to the  
18 weatherization assistance program under part A of title  
19 IV of the Energy Conservation and Production Act (42  
20 U.S.C. 6861 et seq.), including a description of any such  
21 waiver that has been granted and any such request for  
22 a waiver that has been considered but not granted.

1       **Subtitle G—Energy and Water**  
2               **Research Integration**

3   **SEC. 1701. INTEGRATING ENERGY AND WATER RESEARCH.**

4       (a) IN GENERAL.—The Secretary of Energy shall in-  
5   tegrate water considerations into energy research, develop-  
6   ment, and demonstration programs and projects of the  
7   Department of Energy by—

8           (1) advancing energy and energy efficiency  
9       technologies and practices that meet the objectives  
10      of—

11           (A) minimizing freshwater withdrawal and  
12       consumption;

13           (B) increasing water use efficiency;

14           (C) utilizing nontraditional water sources  
15       with efforts to improve the quality of the water  
16       from those sources;

17           (D) minimizing deleterious impacts on  
18       water bodies, groundwater, and waterways; and

19           (E) minimizing seismic impacts;

20       (2) considering the effects climate variability  
21       may have on water supplies and quality for energy  
22       generation and fuel production; and

23       (3) improving understanding of the energy-  
24       water nexus.

25       (b) STRATEGIC PLAN.—

1           (1) IN GENERAL.—Not later than 12 months  
2       after the date of enactment of this Act, the Sec-  
3       retary shall develop a strategic plan identifying the  
4       research, development, and demonstration needs for  
5       Department programs and projects to carry out sub-  
6       section (a). The strategic plan shall include technical  
7       milestones for achieving and assessing progress to-  
8       ward the objectives of subsection (a)(1).

9           (2) SPECIFIC CONSIDERATIONS.—In developing  
10      the strategic plan, the Secretary shall consider—

11           (A) new advanced cooling technologies for  
12      energy generation and fuel production tech-  
13      nologies;

14           (B) performance improvement of existing  
15      cooling technologies and cost reductions associ-  
16      ated with using those technologies;

17           (C) innovative water reuse, recovery, and  
18      treatment technologies in energy generation and  
19      fuel production, including renewable energy;

20           (D) technology development for carbon  
21      capture and storage systems that utilize effi-  
22      cient water use design strategies;

23           (E) technologies that are life-cycle cost ef-  
24      fective;

1 (F) systems analysis and modeling of  
2 issues relating to the energy-water nexus;

3 (G) technologies to treat and utilize waste-  
4 water and produced waters discharged from oil,  
5 natural gas, coalbed methane, and any other  
6 substance to be used as an energy source;

7 (H) advanced materials for the use of non-  
8 traditional water sources for energy generation  
9 and fuel production;

10 (I) biomass production and utilization and  
11 the impact on hydrologic systems;

12 (J) technologies that reduce impacts on  
13 water from energy resource development;

14 (K) energy efficient technologies for water  
15 distribution, treatment, supply, and collection  
16 systems;

17 (L) technologies for energy generation  
18 from water distribution, treatment, supply, and  
19 collection systems;

20 (M) the flexible operation of water infra-  
21 structure to provide essential grid reliability  
22 services;

23 (N) modular or energy-water microgrid  
24 systems that can provide energy and water re-  
25 sources in remote or disaster recovery areas;

1 (O) recovering energy in the form of  
2 biofuels, bioproducts, and biopower from munic-  
3 ipal and industrial wastewaters, and similar or-  
4 ganic streams; and

5 (P) any other area of the energy-water  
6 nexus that the Secretary considers appropriate.

7 (3) COLLABORATION AND NONDUPLICATION.—  
8 In developing the strategic plan, the Secretary shall  
9 coordinate and avoid duplication—

10 (A) with other Federal agencies operating  
11 related programs, if appropriate; and

12 (B) across programs and projects of the  
13 Department, including with those of the Na-  
14 tional Laboratories.

15 (4) RELEVANT INFORMATION AND REC-  
16 OMMENDATIONS.—In developing the strategic plan,  
17 the Secretary shall consider and incorporate, as ap-  
18 propriate, relevant information and recommenda-  
19 tions, including those of the National Water Avail-  
20 ability and Use Assessment Program under section  
21 9508(d) of the Omnibus Public Land Management  
22 Act of 2009 (42 U.S.C. 10368(d)).

23 (5) ADDITIONAL PARTICIPATION.—In devel-  
24 oping the strategic plan, the Secretary shall consult  
25 and coordinate with a diverse group of representa-

1       tives from research and academic institutions, indus-  
2       try, public utility commissions, and State and local  
3       governments who have expertise in technologies and  
4       practices relating to the energy-water nexus.

5           (6) SUBMISSION TO CONGRESS.—Not later than  
6       12 months after the date of enactment of this Act,  
7       the Secretary shall submit to the Committee on  
8       Science, Space, and Technology of the House of  
9       Representatives and the Committee on Energy and  
10      Natural Resources of the Senate the strategic plan.

11          (7) UPDATING THE STRATEGIC PLAN.—Not  
12      later than 3 years after the date of enactment of  
13      this Act, and at least once every 5 years thereafter,  
14      the Secretary shall—

15           (A) utilize relevant information produced  
16           by Federal Government agencies, academia,  
17           State, local, and tribal governments and indus-  
18           try to update the strategic plan;

19           (B) include in the updated strategic plan a  
20           description of the changes from the previous  
21           strategic plan and the rationale for such  
22           changes;

23           (C) include a review of progress made to-  
24           wards the milestones outlined in the previous  
25           strategic plan; and

1 (D) submit the updated strategic plan to  
2 the Committee on Science, Space, and Tech-  
3 nology of the House of Representatives and the  
4 Committee on Energy and Natural Resources of  
5 the Senate.

6 (c) ADDITIONAL ACTIVITIES.—The Secretary may  
7 provide for such additional research, development, and  
8 demonstration activities as appropriate to integrate water  
9 considerations into the research, development, and dem-  
10 onstration activities of the Department as described in  
11 subsection (a).

12 **SEC. 1702. ENERGY-WATER OVERSIGHT AND COORDINA-**  
13 **TION.**

14 (a) IN GENERAL.—In carrying out the research, de-  
15 velopment, and demonstration activities outlined in section  
16 1701, the Secretary, in coordination with other relevant  
17 Federal agencies, shall establish an Energy-Water Com-  
18 mittee to promote and enable improved energy and water  
19 resource data collection, reporting, and technological inno-  
20 vation. The Committee shall consist of—

21 (1) representation from each program within  
22 the Department and each Federal agency that con-  
23 ducts research related to the energy-water nexus;  
24 and

1           (2) non-Federal members, including representa-  
2           tives of research and academic institutions, State,  
3           local, and tribal governments, public utility commis-  
4           sions, and industry, who have expertise in tech-  
5           nologies, technological innovations, or practices re-  
6           lating to the energy-water nexus.

7           (b) FUNCTIONS.—The Committee shall, in carrying  
8           out section 1701—

9           (1) make recommendations on the development  
10          and integration of data collection and data commu-  
11          nication standards and protocols, including models  
12          and modeling results, to agencies and entities cur-  
13          rently engaged in collecting the data for the energy-  
14          water nexus;

15          (2) recommend ways to make improvements to  
16          Federal water use data to increase understanding of  
17          trends in energy generation and fuel production, in-  
18          cluding non-cooling water uses;

19          (3) recommend best practices for utilizing infor-  
20          mation from existing monitoring networks to provide  
21          nationally uniform water and energy use and infra-  
22          structure data; and

23          (4) conduct annual technical workshops, includ-  
24          ing at least one regional workshop annually, to fa-  
25          cilitate information exchange among Federal, re-



1 regional, State, local, and tribal governments and pri-  
2 vate sector experts on technologies that encourage  
3 the conservation and efficient use of water and en-  
4 ergy.

5 (c) REPORTS.—Not later than 1 year after the date  
6 of enactment of this Act, and at least once every 2 years  
7 thereafter, the Committee, through the Secretary, shall  
8 transmit to Congress a report on its findings and activities  
9 under this section.

10 (d) APPLICABILITY OF FEDERAL ADVISORY COM-  
11 MITTEE ACT.—Except as otherwise provided in this sec-  
12 tion, the Federal Advisory Committee Act (5 U.S.C. App.)  
13 shall apply to the Committee.

14 **SEC. 1703. RULE OF CONSTRUCTION.**

15 Notwithstanding any other provision of law, nothing  
16 in this part shall be construed to require State, tribal, or  
17 local governments to provide additional data for Federal  
18 purposes, or to take any action that may result in an in-  
19 creased financial burden to such governments by restrict-  
20 ing the use of water by such governments.

21 **SEC. 1704. COORDINATION AND NONDUPLICATION.**

22 To the maximum extent practicable, the Secretary  
23 shall coordinate activities under this part with other pro-  
24 grams of the Department and other Federal research pro-  
25 grams.

1 **SEC. 1705. DEFINITIONS.**

2 In this part:

3 (1) COMMITTEE.—The term “Committee”  
4 means the Energy-Water Committee established  
5 under section 1702(a).

6 (2) DEPARTMENT.—The term “Department”  
7 means the Department of Energy.

8 (3) ENERGY-WATER NEXUS.—The term “en-  
9 ergy-water nexus” means the energy required to pro-  
10 vide reliable water supplies and the water required  
11 to provide reliable energy supplies throughout the  
12 United States.

13 (4) SECRETARY.—The term “Secretary” means  
14 the Secretary of Energy.

15 **Subtitle H—Other Matters**

16 **SEC. 1801. MODIFICATIONS TO THE CEILING FAN ENERGY**  
17 **CONSERVATION STANDARD.**

18 (a) IN GENERAL.—Section 325(ff)(6) of the Energy  
19 Policy and Conservation Act (42 U.S.C. 6295(ff)(6)) is  
20 amended by adding at the end the following:

21 “(C)(i) Large-diameter ceiling fans manufactured on  
22 or after January 21, 2020, shall—

23 “(I) not be required to meet minimum ceiling  
24 fan efficiency in terms of ratio of the total airflow  
25 to the total power consumption as described in the  
26 final rule titled ‘Energy Conservation Program: En-

1       ergy Conservation Standards for Ceiling Fans’ (82  
2       Fed. Reg. 6826 (January 19, 2017)); and

3           “(II) have a CFEI greater than or equal to—

4               “(aa) 1.00 at high speed; and

5               “(bb) 1.31 at 40 percent speed or the  
6       nearest speed that is not less than 40 percent  
7       speed.

8       “(ii) For purposes of this subparagraph, the term  
9       ‘CFEI’ means the Fan Energy Index for large-diameter  
10      ceiling fans, calculated in accordance with ANSI/AMCA  
11      Standard 208–18 titled ‘Calculation of the Fan Energy  
12      Index’, with the following modifications:

13           “(I) Using an Airflow Constant ( $Q_0$ ) of 26,500  
14      cubic feet per minute.

15           “(II) Using a Pressure Constant ( $P_0$ ) of 0.0027  
16      inches water gauge.

17           “(III) Using a Fan Efficiency Constant ( $\eta_0$ ) of  
18      42 percent.”.

19      (b) REVISION.—For purposes of section 325(m) of  
20      the Energy Policy and Conservation Act (42 U.S.C.  
21      6295(m)), the standard established in section  
22      325(ff)(6)(C) of such Act (as added by subsection (a) of  
23      this section) shall be treated as if such standard was  
24      issued on January 19, 2017.

1 **SEC. 1802. SMART ENERGY AND WATER EFFICIENCY PRO-**  
2 **GRAM.**

3 (a) DEFINITIONS.—In this section:

4 (1) ELIGIBLE ENTITY.—The term “eligible enti-  
5 ty” means—

6 (A) a municipality;

7 (B) a water district; and

8 (C) any other entity that provides water,  
9 wastewater, or water reuse services, including a  
10 joint water and power authority.

11 (2) SECRETARY.—The term “Secretary” means  
12 the Secretary of Energy.

13 (3) SMART ENERGY AND WATER EFFICIENCY  
14 PROGRAM.—The term “smart energy and water effi-  
15 ciency program” or “program” means the program  
16 established under subsection (b).

17 (b) SMART ENERGY AND WATER EFFICIENCY PRO-  
18 GRAM.—

19 (1) IN GENERAL.—The Secretary shall establish  
20 and carry out a smart energy and water efficiency  
21 program in accordance with this section.

22 (2) ELIGIBLE PROJECTS.—In carrying out the  
23 smart energy and water efficiency program, the Sec-  
24 retary shall award grants to eligible entities to carry  
25 out projects that implement advanced and innovative  
26 technology-based solutions that will improve the en-

1       ergy or water efficiency of water, wastewater, or  
2       water reuse systems to—

3               (A) help eligible entities make significant  
4               progress in conserving water, conserving energy,  
5               or reducing the operating costs of such systems;

6               (B) support the implementation of innova-  
7               tive processes or the installation of advanced  
8               automated systems that provide real-time data  
9               on energy and water; or

10              (C) improve predictive maintenance of  
11              water, wastewater, or water reuse systems  
12              through the use of Internet-connected tech-  
13              nologies, such as sensors, intelligent gateways,  
14              or security embedded in hardware.

15              (3) PROJECT SELECTION.—

16              (A) IN GENERAL.—The Secretary shall  
17              make competitive, merit-reviewed grants under  
18              the program to not fewer than 3, but not more  
19              than 5, eligible entities.

20              (B) SELECTION CRITERIA.—In selecting an  
21              eligible entity to receive a grant under the pro-  
22              gram, the Secretary shall consider—

23                      (i) energy and cost savings anticipated  
24                      to result from the project;

1 (ii) the innovative nature, commercial  
2 viability, and reliability of the technology  
3 to be used;

4 (iii) the degree to which the project  
5 integrates innovative sensors, software,  
6 hardware, analytics, and management  
7 tools;

8 (iv) the anticipated cost-effectiveness  
9 of the project in terms of energy savings,  
10 water savings or reuse, and infrastructure  
11 costs averted;

12 (v) whether the technology can be de-  
13 ployed in a variety of geographic regions  
14 and the degree to which the technology can  
15 be implemented on a smaller or larger  
16 scale, including whether the technology can  
17 be implemented by other types of eligible  
18 entities; and

19 (vi) whether implementation of the  
20 project will be complete within 5 years.

21 (C) APPLICATIONS.—

22 (i) IN GENERAL.—Subject to clause  
23 (ii), an eligible entity seeking a grant  
24 under the program shall submit to the Sec-  
25 retary an application at such time, in such

1 manner, and containing such information  
2 as the Secretary determines to be nec-  
3 essary.

4 (ii) CONTENTS.—An application under  
5 clause (i) shall, at a minimum, include—

6 (I) a description of the project;

7 (II) a description of the tech-  
8 nology to be used in the project;

9 (III) the anticipated results, in-  
10 cluding energy and water savings, of  
11 the project;

12 (IV) a comprehensive budget for  
13 the project; and

14 (V) the number of households or  
15 customers that are served by the eligi-  
16 ble entity and will benefit from the  
17 project.

18 (4) ADMINISTRATION.—

19 (A) IN GENERAL.—Not later than 300  
20 days after the date of enactment of this Act,  
21 the Secretary shall select grant recipients under  
22 this section.

23 (B) EVALUATIONS.—The Secretary shall  
24 annually for 5 years carry out an evaluation of

1 each project for which a grant is provided  
2 under this section that—

3 (i) evaluates the progress and effects  
4 of the project; and

5 (ii) assesses the degree to which the  
6 project can be replicated in other regions,  
7 systems, and situations.

8 (C) TECHNICAL ASSISTANCE.—On the re-  
9 quest of a grant recipient, the Secretary shall  
10 provide technical assistance to the grant recipi-  
11 ent to carry out the project.

12 (D) BEST PRACTICES.—The Secretary  
13 shall make available to the public—

14 (i) a copy of each evaluation carried  
15 out under subparagraph (B); and

16 (ii) a description of any best practices  
17 identified by the Secretary as a result of  
18 those evaluations.

19 (E) REPORT TO CONGRESS.—Not later  
20 than the date on which the Secretary completes  
21 the last evaluation required under subparagraph  
22 (B), the Secretary shall submit to Congress a  
23 report containing the results of each evaluation  
24 carried out under such subparagraph.



1 (c) AUTHORIZATION OF APPROPRIATIONS.—There is  
2 authorized to be appropriated \$15,000,000 to carry out  
3 this section, to remain available until expended.

4 **SEC. 1803. ENERGY EFFICIENCY AND CONSERVATION**  
5 **BLOCK GRANT PROGRAM.**

6 (a) PURPOSE.—Section 542(b)(1) of the Energy  
7 Independence and Security Act of 2007 (42 U.S.C.  
8 17152(b)(1)) is amended—

9 (1) in subparagraph (A), by striking “; and”  
10 and inserting a semicolon;

11 (2) in subparagraph (B), by striking the semi-  
12 colon and inserting “; and”; and

13 (3) by adding at the end the following:

14 “(C) diversifies energy supplies, including  
15 by facilitating and promoting the use of alter-  
16 native fuels;”.

17 (b) USE OF FUNDS.—Section 544(9) of the Energy  
18 Independence and Security Act of 2007 (42 U.S.C.  
19 17154(9)) is amended to read as follows:

20 “(9) deployment of energy distribution tech-  
21 nologies that significantly increase energy efficiency  
22 or expand access to alternative fuels, including—

23 “(A) distributed resources;

24 “(B) district heating and cooling systems;

25 and

1                   “(C) infrastructure for delivering alter-  
2                   native fuels;”.

3           (c) COMPETITIVE GRANTS.—Section 546(c)(2) of the  
4 Energy Independence and Security Act of 2007 (42  
5 U.S.C. 17156(c)(2)) is amended by inserting “, including  
6 projects to expand the use of alternative fuels” before the  
7 period at the end.

8           (d) FUNDING.—Section 548(a) of the Energy Inde-  
9 pendence and Security Act of 2007 (42 U.S.C. 17158(a))  
10 is amended to read as follows:

11           “(a) AUTHORIZATION OF APPROPRIATIONS.—

12                   “(1) GRANTS.—There is authorized to be ap-  
13 propriated to the Secretary for the provision of  
14 grants under the program \$3,500,000,000 for each  
15 of fiscal years 2021 through 2025.

16                   “(2) ADMINISTRATIVE COSTS.—There is au-  
17 thorized to be appropriated to the Secretary for ad-  
18 ministrative expenses of the program \$35,000,000  
19 for each of fiscal years 2021 through 2025.”.

20           (e) TECHNICAL AMENDMENTS.—Section 543 of the  
21 Energy Independence and Security Act of 2007 (42  
22 U.S.C. 17153) is amended—

23                   (1) in subsection (c), by striking “subsection  
24                   (a)(2)” and inserting “subsection (a)(3)”; and

1 (2) in subsection (d), by striking “subsection  
2 (a)(3)” and inserting “subsection (a)(4)”.

3 **SEC. 1804. ENERGY EFFICIENT PUBLIC BUILDINGS.**

4 (a) GRANTS.—Section 125(a) of the Energy Policy  
5 Act of 2005 (42 U.S.C. 15822(a)) is amended—

6 (1) in paragraph (1)—

7 (A) by inserting “Standard 90.1 of the  
8 American Society of Heating, Refrigerating,  
9 and Air-Conditioning Engineers,” after “the  
10 International Energy Conservation Code,”; and

11 (B) by striking “; or” and inserting a  
12 semicolon;

13 (2) in paragraph (2), by striking the period at  
14 the end and inserting “; or”; and

15 (3) by adding at the end the following:

16 “(3) through benchmarking programs to enable  
17 use of building performance data to evaluate the  
18 performance of energy efficiency investments over  
19 time.”.

20 (b) ASSURANCE OF IMPROVEMENT.—Section 125 of  
21 the Energy Policy Act of 2005 (42 U.S.C. 15822) is  
22 amended by redesignating subsections (b) and (c) as sub-  
23 sections (c) and (d), respectively, and inserting after sub-  
24 section (a) the following:

25 “(b) ASSURANCE OF IMPROVEMENT.—

1           “(1) VERIFICATION.—A State agency receiving  
2           a grant for activities described in paragraph (1) or  
3           (2) of subsection (a) shall ensure, as a condition of  
4           eligibility for assistance pursuant to such grant, that  
5           a unit of local government receiving such assistance  
6           obtain third-party verification of energy efficiency  
7           improvements in each public building with respect to  
8           which such assistance is used.

9           “(2) GUIDANCE.—The Secretary may provide  
10          guidance to State agencies to comply with paragraph  
11          (1). In developing such guidance, the Secretary shall  
12          consider available third-party verification tools for  
13          high-performing buildings and available third-party  
14          verification tools for energy efficiency retrofits.”.

15          (c) ADMINISTRATION.—Section 125(c) of the Energy  
16          Policy Act of 2005, as so redesignated, is amended—

17                 (1) in the matter preceding paragraph (1), by  
18                 striking “State energy offices receiving grants” and  
19                 inserting “A State agency receiving a grant”;

20                 (2) in paragraph (1), by striking “; and” and  
21                 inserting a semicolon;

22                 (3) in paragraph (2), by striking the period at  
23                 the end and inserting “; and”; and

24                 (4) by adding at the end the following:

1           “(3) ensure that all laborers and mechanics em-  
2       ployed by contractors and subcontractors in the per-  
3       formance of construction, alteration, or repair work  
4       financed in whole or in part with assistance received  
5       pursuant to this section shall be paid wages at rates  
6       not less than those prevailing on projects of a simi-  
7       lar character in the locality, as determined by the  
8       Secretary of Labor in accordance with subchapter  
9       IV of chapter 31 of title 40, United States Code  
10      (and with respect to such labor standards, the Sec-  
11      retary of Labor shall have the authority and func-  
12      tions set forth in Reorganization Plan Numbered 14  
13      of 1950 (64 Stat. 1267; 5 U.S.C. App.) and section  
14      3145 of title 40, United States Code).”.

15      (d) **AUTHORIZATION OF APPROPRIATIONS.**—Section  
16 125(d) of the Energy Policy Act of 2005, as so redesign-  
17 nated, is amended by striking “\$30,000,000 for each of  
18 fiscal years 2006 through 2010” and inserting  
19 “\$100,000,000 for each of fiscal years 2021 through  
20 2025”.

21 **SEC. 1805. SMART BUILDINGS.**

22      (a) **DEFINITIONS.**—In this section:

23           (1) **FRONTLINE COMMUNITY.**—The term  
24      “frontline community” means a community with sig-  
25      nificant representation of communities of color, low-

1 income communities, or Tribal and indigenous com-  
2 munities, that experiences, or is at risk of experi-  
3 encing, higher or more adverse human health or en-  
4 vironmental effects.

5 (2) SECRETARY.—The term “Secretary” means  
6 the Secretary of Energy.

7 (3) SMART BUILDING.—The term “smart build-  
8 ing” means a building, or collection of buildings,  
9 with an energy system that—

10 (A) is flexible and automated in its energy  
11 demand and usage in response to changes asso-  
12 ciated with the environment, occupant behav-  
13 iors, building conditions, and other events;

14 (B) has monitoring, diagnostics, control,  
15 and communication connectivity that enables  
16 analysis and control of energy consumption and  
17 generation;

18 (C) has a systems-based approach to inte-  
19 grating the overall building operations for con-  
20 trol of energy demand, generation, and storage;

21 (D) has the ability to share information  
22 with utilities or other third-party entities, as  
23 appropriate in order to coordinate building en-  
24 ergy assets to support energy system reliability  
25 and resilience;

1 (E) supports the health and safety of occu-  
2 pants; and

3 (F) incorporates cybersecurity protections.

4 (b) FEDERAL SMART BUILDING PROGRAM.—

5 (1) ESTABLISHMENT.—Not later than 1 year  
6 after the date of enactment of this Act, the Sec-  
7 retary shall, in consultation with the Administrator  
8 of General Services, establish a program to be  
9 known as the “Federal Smart Building Program”—

10 (A) to implement smart building tech-  
11 nology; and

12 (B) to demonstrate the costs and benefits  
13 of smart buildings.

14 (2) SELECTION.—

15 (A) IN GENERAL.—The Secretary shall co-  
16 ordinate the selection of not fewer than 1 build-  
17 ing from among each of several key Federal  
18 agencies, as described in paragraph (4), to com-  
19 pose an appropriately diverse set of smart  
20 buildings based on size, type, and geographic lo-  
21 cation.

22 (B) INCLUSION OF COMMERCIALY OPER-  
23 ATED BUILDINGS.—In making selections under  
24 subparagraph (A), the Secretary may include

1 buildings that are owned by the Federal Gov-  
2 ernment but are commercially operated.

3 (3) TARGETS.—Not later than 18 months after  
4 the date of enactment of this Act, the Secretary  
5 shall establish targets for the number of smart  
6 buildings to be commissioned and evaluated by key  
7 Federal agencies by 3 years and 6 years after the  
8 date of enactment of this Act.

9 (4) FEDERAL AGENCY DESCRIBED.—The key  
10 Federal agencies referred to paragraph (2)(A) shall  
11 include buildings operated by—

12 (A) the Department of the Army;  
13 (B) the Department of the Navy;  
14 (C) the Department of the Air Force;  
15 (D) the Department of Energy;  
16 (E) the Department of the Interior;  
17 (F) the Department of Veterans Affairs;

18 and

19 (G) the General Services Administration.

20 (5) REQUIREMENT.—In implementing the pro-  
21 gram established under this subsection, the Sec-  
22 retary shall leverage existing financing mechanisms,  
23 including energy savings performance contracts, util-  
24 ity energy service contracts, and annual appropria-  
25 tions.



1           (6) EVALUATION.—Using the guidelines of the  
2       Federal Energy Management Program relating to  
3       whole-building evaluation, measurement, and  
4       verification, the Secretary shall evaluate the costs  
5       and benefits of the buildings selected under para-  
6       graph (2), including an identification of—

7           (A) which advanced building tech-  
8       nologies—

9           (i) are most cost-effective; and

10          (ii) show the most promise for—

11               (I) increasing building energy  
12       savings;

13               (II) increasing service perform-  
14       ance to building occupants;

15               (III) reducing environmental im-  
16       pacts; and

17               (IV) establishing cybersecurity;  
18       and

19          (B) any other information the Secretary  
20       determines to be appropriate.

21       (7) AWARDS.—The Secretary may expand  
22       awards made under the Federal Energy Manage-  
23       ment Program and the Better Building Challenge to  
24       recognize specific agency achievements in accel-  
25       erating the adoption of smart building technologies.

1 (c) SURVEY OF PRIVATE SECTOR SMART BUILD-  
2 INGS.—

3 (1) SURVEY.—The Secretary shall conduct a  
4 survey of privately owned smart buildings through-  
5 out the United States, including commercial build-  
6 ings, laboratory facilities, hospitals, multifamily resi-  
7 dential buildings, and buildings owned by nonprofit  
8 organizations and institutions of higher education.

9 (2) SELECTION.—From among the smart build-  
10 ings surveyed under paragraph (1), the Secretary  
11 shall select not fewer than 1 building each from an  
12 appropriate range of building sizes, types, and geo-  
13 graphic locations.

14 (3) EVALUATION.—Using the guidelines of the  
15 Federal Energy Management Program relating to  
16 whole-building evaluation, measurement, and  
17 verification, the Secretary shall evaluate the costs  
18 and benefits of the buildings selected under para-  
19 graph (2), including an identification of—

20 (A) which advanced building technologies  
21 and systems—

22 (i) are most cost-effective; and

23 (ii) show the most promise for—

24 (I) increasing building energy  
25 savings;

- 1 (II) increasing service perform-
- 2 ance to building occupants;
- 3 (III) reducing environmental im-
- 4 pacts; and
- 5 (IV) establishing cybersecurity;
- 6 and

7 (B) any other information the Secretary  
8 determines to be appropriate.

9 (d) LEVERAGING EXISTING PROGRAMS.—

10 (1) BETTER BUILDINGS PROGRAM.—

11 (A) BETTER BUILDINGS CHALLENGE.—

12 The Secretary shall carry out a program to pro-  
13 vide technical assistance for entities to set and  
14 achieve goals to improve energy efficiency, re-  
15 duce greenhouse gas emissions and emissions of  
16 other pollutants, and reduce embodied carbon  
17 in commercial and residential buildings through  
18 the commercial application of relevant tools and  
19 technologies. In carrying out this program, the  
20 Secretary shall—

- 21 (i) identify opportunities for opti-
- 22 mizing energy efficiency, demand manage-
- 23 ment, and increasing emissions reductions
- 24 in buildings to achieve net-zero energy or

1 energy-generating buildings, including  
2 through electrification;

3 (ii) promote the commercial applica-  
4 tion of emerging concepts and technologies  
5 in buildings;

6 (iii) share best practices from success-  
7 ful projects; and

8 (iv) ensure a diversity of entities re-  
9 ceive technical assistance, including low-in-  
10 come and rural communities.

11 (B) BETTER BUILDINGS ACCELERATOR.—

12 In carrying out the program under subpara-  
13 graph (A), the Secretary shall develop smart  
14 building accelerators that will demonstrate in-  
15 novative policies and approaches to accelerate  
16 the transition to smart buildings in the public,  
17 institutional, laboratory, industrial, commercial,  
18 and residential sectors, including in rural, low-  
19 income, and multi-family housing.

20 (C) BUILDING AMERICA PROGRAM.—The  
21 Secretary shall carry out a research, develop-  
22 ment, and demonstration program on tools,  
23 technologies, and techniques to reduce energy  
24 use and emissions in new and existing residen-

1            tial buildings, in partnership with industry enti-  
2            ties.

3            (2) RESEARCH AND DEVELOPMENT.—

4                    (A) IN GENERAL.—Not later than 180  
5            days after the date of enactment of this Act,  
6            the Secretary shall establish a program of re-  
7            search, development, demonstration, and com-  
8            mercial application to develop cost-effective  
9            tools, technologies, and practices that reduce  
10           greenhouse gas emissions or other pollutants  
11           from, increase the energy efficiency of, and in-  
12           crease beneficial electrification of, new and ex-  
13           isting commercial and residential buildings, in-  
14           cluding retrofits and electrification of existing  
15           buildings, rural housing, low-income housing,  
16           multi-family housing, and manufactured hous-  
17           ing.

18                    (B) ENERGY EQUITY.—The Secretary shall  
19            carry out research to identify barriers to and  
20            strategies for expanding the use of low-emis-  
21            sions and energy-efficient building technologies  
22            and appliances in the buildings where members  
23            of frontline communities live and work. Re-  
24            search topics covered under this subparagraph  
25            may include—

1 (i) barriers to the use of technologies  
2 developed under this subsection in rural,  
3 low-income, and multi-family housing;

4 (ii) causes of and solutions for inequi-  
5 table energy costs in residential buildings  
6 based on race or class; and

7 (iii) solutions that enable energy-effi-  
8 cient homes while keeping housing afford-  
9 able for low-income communities.

10 (C) NON-TECHNICAL BARRIERS.—The Sec-  
11 retary shall support research and analysis to  
12 identify non-technical barriers, and methods to  
13 address such barriers, to enable greater use of  
14 tools and technologies developed under this sub-  
15 section in new and existing commercial and res-  
16 idential buildings, including rural housing, low-  
17 income housing, and multi-family housing.

18 (D) ADVANCED BUILDING CONSTRUCTION,  
19 DESIGN, AND RETROFITS.—As part of the pro-  
20 gram established under subparagraph (A), the  
21 Secretary shall support research and develop-  
22 ment on technologies and methodologies to en-  
23 able advanced building design, construction  
24 techniques, and retrofits. In supporting re-

1 search and development under subparagraph  
2 (A), the Secretary shall—

3 (i) include considerations of a full  
4 lifecycle analysis during building design,  
5 manufacturing, and construction, including  
6 environmental considerations, embodied en-  
7 ergy and embodied carbon in building ma-  
8 terials, transportation of materials, and  
9 implications for final disposal and recy-  
10 cling;

11 (ii) incorporate principles of resilient  
12 building design and construction through  
13 the consideration of regional differences  
14 in—

15 (I) climate, season, temperature,  
16 and precipitation in consultation with  
17 the National Oceanic and Atmospheric  
18 Administration; and

19 (II) fuel mix and energy produc-  
20 tion, including through the develop-  
21 ment of vulnerability assessments and  
22 analysis of building resilience for pro-  
23 posed building designs, building sites,  
24 or existing buildings;

1 (iii) support research and development  
2 on the use of various potential energy  
3 sources and distributed generation to sup-  
4 ply cooling, heating, and power for build-  
5 ings, including integrated and adaptive  
6 control solutions that address traditional  
7 building energy management and emerging  
8 technologies, such as batteries, thermal  
9 storage, and combined heat and power,  
10 compatible with all sizes of buildings;

11 (iv) support the development and inte-  
12 gration of technologies that enable low-  
13 emissions and energy-efficient or advanced  
14 buildings, such as heating, ventilation, air-  
15 conditioning, and refrigeration systems and  
16 other appliances that are cost-competitive  
17 over the life of the product as compared to  
18 conventional technologies and that incor-  
19 porate considerations of retrofitting and  
20 ease of installation, using a whole-systems  
21 and whole-buildings approach;

22 (v) support the development and inte-  
23 gration of cost-effective next-generation  
24 window and building envelope technologies



1           that incorporate considerations of retro-  
2           fitting and ease of installation;

3           (vi) support development of alter-  
4           native working fluids and refrigerants for  
5           use in buildings equipment to reduce their  
6           impact on climate change; and

7           (vii) research methods to enhance  
8           comfort and health of individual occupants  
9           in buildings that also result in improved  
10          energy efficiency and emissions reductions,  
11          including indoor air pollution.

12          (E) GRID-INTERACTIVE BUILDINGS.—As  
13          part of the program established under subpara-  
14          graph (A), the Secretary shall support research  
15          and development to enable components of com-  
16          mercial and residential buildings to serve as dy-  
17          namic energy loads and energy resources to en-  
18          able smart building designs. In particular, the  
19          Secretary shall focus on the development of—

20               (i) advanced building energy manage-  
21               ment systems through the integration of  
22               sensors and advanced control technologies  
23               and systems that allow whole-building opti-  
24               mization and integration with other energy  
25               systems, including photovoltaics, electric

1 vehicles, and energy storage technologies  
2 such as thermal storage;

3 (ii) cost-effective sensors that enable  
4 monitoring of building conditions and en-  
5 ergy load, including, as appropriate, re-  
6 porting energy use and forecasting energy  
7 needs;

8 (iii) improved analysis of data on the  
9 energy use of devices connected to build-  
10 ings, including miscellaneous electric loads;

11 (iv) advanced control technologies and  
12 systems that enable flexible operation of  
13 building components and that are capable  
14 of coordinating and executing energy con-  
15 trol commands in response to signals from  
16 the electric grid;

17 (v) flexible building components capa-  
18 ble of reporting and modulating energy use  
19 in response to control commands, as ap-  
20 propriate;

21 (vi) data analysis and communication  
22 protocols to further systems integration,  
23 interoperability, and automation;

1 (vii) building energy storage capabili-  
2 ties to modulate peak and off-peak energy  
3 demand;

4 (viii) distributed energy resources at  
5 the community- and building-level through  
6 localized electric grids;

7 (ix) technologies to reduce energy use  
8 and emissions in connected communities  
9 and neighborhoods located in a variety of  
10 climates, including by enabling transactive  
11 energy concepts; and

12 (x) cybersecurity practices that pro-  
13 tect privacy and personally identifiable in-  
14 formation.

15 (F) MODELING AND DATA ANALYSIS.—As  
16 part of the program established under subpara-  
17 graph (A), the Secretary shall support the de-  
18 velopment of building models, including for the  
19 design and operation of buildings, and the anal-  
20 ysis of relevant data to enable smart buildings.  
21 In particular, the Secretary shall focus on the  
22 development of—

23 (i) advanced modeling capabilities that  
24 include modeling of grid interactivity, resil-  
25 ience, and relevant behavioral, community-

1 scale, and urban-scale activities in order  
2 to—

3 (I) provide system-level analysis  
4 of new technologies, including distrib-  
5 uted generation and storage;

6 (II) evaluate system benefits such  
7 as emissions reductions, community  
8 resilience, distribution grid reliability,  
9 and service to underserved commu-  
10 nities;

11 (III) provide data, derived from  
12 both simulation and demonstration  
13 projects established under subpara-  
14 graph (G), to inform decision support  
15 and new business models; and

16 (ii) automated methods to generate  
17 models of proposed or existing buildings;

18 (iii) methods to address barriers, in-  
19 cluding non-technical barriers, to commer-  
20 cial application of building models for  
21 building operation;

22 (iv) methods to analyze data collected  
23 by technologies in smart buildings and col-  
24 lections of buildings;

1 (v) artificial intelligence and machine  
2 learning approaches to building energy  
3 management; and

4 (vi) advanced data collection and mon-  
5 itoring methods for utilities at the building  
6 level and component level.

7 (G) DEMONSTRATION PROGRAM.—The  
8 Secretary shall establish a competitive grant  
9 program for the demonstration of advanced  
10 building technologies and systems developed  
11 under the program established under subpara-  
12 graph (A) that—

13 (i) focuses on a range of new and ex-  
14 isting building types, including low-income  
15 housing, rural housing and agricultural  
16 buildings, multi-family residential build-  
17 ings, manufactured housing, and small and  
18 medium-sized commercial buildings; and

19 (ii) includes community-scale dem-  
20 onstration projects.

21 (H) TESTING AND VALIDATION.—In car-  
22 rying out the program under subparagraph (A),  
23 the Secretary shall—

24 (i) support testing and validation ac-  
25 tivities to improve the commercial applica-

1           tion of relevant tools, technologies, and  
2           methods, including the use of testbeds to  
3           determine cost savings and performance in  
4           realistic scenarios; and

5                   (ii) support analysis, testing, and vali-  
6           dation to accurately determine energy sav-  
7           ings, emissions reductions, cost-savings,  
8           and other potential impacts of the highest-  
9           performing appliances that are commer-  
10          cially available.

11           (I) PARTNERSHIPS.—In carrying out the  
12          activities authorized in this subsection, the Sec-  
13          retary shall work with utilities, State and local  
14          energy offices, building owners, technology de-  
15          velopers, contractors, building developers, and  
16          other relevant entities to guide the focus areas  
17          of the activities of the program carried out  
18          under subparagraph (A) and to encourage the  
19          commercial application of these technologies by  
20          building owners, operators, developers, occu-  
21          pants, contractors, or other relevant entities.

22           (J) COORDINATION.—In carrying out this  
23          subsection, the Secretary shall coordinate across  
24          all relevant program offices at the Department  
25          of Energy, including the Office of Electricity,

1           the Advanced Manufacturing Office, the Vehicle  
2           Technologies Office, the Geothermal Tech-  
3           nologies Office, and the Office of Cybersecurity,  
4           Energy Security, and Emergency Response.

5           (e) REPORT.—Not later than 2 years after the date  
6   of enactment of this Act, and every 2 years thereafter until  
7   a total of 3 reports have been made, the Secretary shall  
8   submit to the Committee on Energy and Natural Re-  
9   sources of the Senate and the Committee on Energy and  
10  Commerce and the Committee on Science, Space, and  
11  Technology of the House of Representatives a report on—

12           (1) the establishment of the Federal Smart  
13   Building Program and the evaluation of Federal  
14   smart buildings under subsection (b);

15           (2) the survey and evaluation of private sector  
16   smart buildings under subsection (c); and

17           (3) any recommendations of the Secretary to  
18   further accelerate the transition to smart buildings.

1     **TITLE II—RENEWABLE ENERGY**

2             **Subtitle A—Energy Storage**

3     **PART 1—CONSIDERATION OF ENERGY STORAGE**

4                     **SYSTEMS**

5     **SEC. 2101. CONSIDERATION OF ENERGY STORAGE SYS-**  
6                     **TEMS.**

7             (a) IN GENERAL.—Section 111(d) of the Public Util-  
8     ity Regulatory Policies Act of 1978 (16 U.S.C. 2621(d))  
9     is amended by adding at the end the following:

10                 “(20) CONSIDERATION OF ENERGY STORAGE  
11     SYSTEMS.—Each State shall consider requiring that,  
12     as part of a supply side resource planning process,  
13     an electric utility of the State demonstrate to the  
14     State that the electric utility considered an invest-  
15     ment in energy storage systems based on appro-  
16     priate factors, including—

17                     “(A) total costs and normalized life cycle  
18     costs;

19                     “(B) cost effectiveness;

20                     “(C) improved reliability;

21                     “(D) security; and

22                     “(E) system performance and efficiency.”.

23             (b) TIME LIMITATIONS.—Section 112(b) of the Pub-  
24     lic Utility Regulatory Policies Act of 1978 (16 U.S.C.  
25     2622(b)) is amended by adding at the end the following:



1 “(7)(A) Not later than 1 year after the date of  
2 enactment of this paragraph, each State regulatory  
3 authority (with respect to each electric utility for  
4 which the State regulatory authority has ratemaking  
5 authority) and each nonregulated electric utility  
6 shall commence the consideration referred to in sec-  
7 tion 111, or set a hearing date for consideration,  
8 with respect to the standard established by para-  
9 graph (20) of section 111(d).

10 “(B) Not later than 2 years after the date of  
11 enactment of this paragraph, each State regulatory  
12 authority (with respect to each electric utility for  
13 which the State regulatory authority has ratemaking  
14 authority), and each nonregulated electric utility,  
15 shall complete the consideration, and shall make the  
16 determination, referred to in section 111 with re-  
17 spect to the standard established by paragraph (20)  
18 of section 111(d).”.

19 (c) FAILURE TO COMPLY.—Section 112(c) of the  
20 Public Utility Regulatory Policies Act of 1978 (16 U.S.C.  
21 2622(c)) is amended by adding at the end the following:  
22 “In the case of the standard established by paragraph (20)  
23 of section 111(d), the reference contained in this sub-  
24 section to the date of enactment of this Act shall be

1 deemed to be a reference to the date of enactment of such  
2 paragraph (20).”.

3 (d) PRIOR STATE ACTIONS.—Section 112(d) of the  
4 Public Utility Regulatory Policies Act of 1978 (16 U.S.C.  
5 2622(d)) is amended by adding at the end the following:

6 “(g) PRIOR STATE ACTIONS.—Subsections (b) and  
7 (c) of this section shall not apply to the standard estab-  
8 lished by paragraph (20) of section 111(d) in the case of  
9 any electric utility in a State if, before the enactment of  
10 this subsection—

11 “(1) the State has implemented for such utility  
12 the standard concerned (or a comparable standard);

13 “(2) the State regulatory authority for such  
14 State or relevant nonregulated electric utility has  
15 conducted a proceeding to consider implementation  
16 of the standard concerned (or a comparable stand-  
17 ard) for such utility; or

18 “(3) the State legislature has voted on the im-  
19 plementation of such standard (or a comparable  
20 standard) for such utility.”.

21 (e) PRIOR AND PENDING PROCEEDINGS.—Section  
22 124 of the Public Utility Regulatory Policies Act of 1978  
23 (16 U.S.C. 2634) is amended is amended by adding at  
24 the end the following: “In the case of the standard estab-  
25 lished by paragraph (20) of section 111(d), the reference

1 contained in this section to the date of the enactment of  
2 this Act shall be deemed to be a reference to the date of  
3 enactment of such paragraph (20).”.

4 **SEC. 2102. COORDINATION OF PROGRAMS.**

5 To the maximum extent practicable, the Secretary of  
6 Energy shall ensure that the funding and administration  
7 of the different offices within the Grid Modernization Ini-  
8 tiative of the Department of Energy and other programs  
9 conducting energy storage research are coordinated and  
10 streamlined.

11 **PART 2—ENERGY STORAGE AND MICROGRID**  
12 **PROJECTS**

13 **SEC. 2121. DEFINITIONS.**

14 (a) DEFINITIONS.—In this part:

15 (1) ELIGIBLE ENTITY.—The term “eligible enti-  
16 ty” means—

17 (A) a rural electric cooperative; or

18 (B) a nonprofit organization working with  
19 at least 6 rural electric cooperatives.

20 (2) ENERGY STORAGE.—The term “energy  
21 storage” means the use of equipment or facilities re-  
22 lating to the electric grid that are capable of absorb-  
23 ing and converting energy, as applicable, storing the  
24 energy for a period of time, and dispatching the en-  
25 ergy, that—

1 (A) use mechanical, electrochemical, bio-  
2 chemical, or thermal processes, to convert and  
3 store energy that was generated at an earlier  
4 time for use at a later time;

5 (B) use mechanical, electrochemical, bio-  
6 chemical, or thermal processes to convert and  
7 store energy generated from mechanical proc-  
8 esses that would otherwise be wasted for deliv-  
9 ery at a later time; or

10 (C) convert and store energy in an electric,  
11 thermal, or gaseous state for direct use for  
12 heating or cooling at a later time in a manner  
13 that avoids the need to use electricity or other  
14 fuel sources at that later time, as is offered by  
15 grid-enabled water heaters.

16 (3) ISLAND.—The term “island mode” means a  
17 mode in which a distributed generator or energy  
18 storage device continues to power a location in the  
19 absence of electric power from the primary source.

20 (4) MICROGRID.—The term “microgrid” means  
21 an interconnected system of loads and distributed  
22 energy resources, including generators and energy  
23 storage devices, within clearly defined electrical  
24 boundaries that—

1 (A) acts as a single controllable entity with  
2 respect to the electric grid; and

3 (B) can connect to, and disconnect from,  
4 the electric grid to operate in both grid-con-  
5 nected mode and island mode.

6 (5) RENEWABLE ENERGY SOURCE.—The term  
7 “renewable energy source” has the meaning given  
8 the term in section 609(a) of the Public Utility Reg-  
9 ulatory Policies Act of 1978 (7 U.S.C. 918c(a)).

10 (6) RURAL ELECTRIC COOPERATIVE.—The term  
11 “rural electric cooperative” means an electric coop-  
12 erative (as defined in section 3 of the Federal Power  
13 Act (16 U.S.C. 796)) that sells electric energy to  
14 persons in rural areas.

15 (7) SECRETARY.—The term “Secretary” means  
16 the Secretary of Energy.

17 **SEC. 2122. ENERGY STORAGE AND MICROGRID ASSISTANCE**  
18 **PROGRAM.**

19 (a) IN GENERAL.—Not later than 180 days after the  
20 date of enactment of this Act, the Secretary shall establish  
21 a program under which the Secretary shall—

22 (1) provide grants to eligible entities under sub-  
23 section (c);

24 (2) provide technical assistance to eligible enti-  
25 ties under subsection (d); and

1           (3) disseminate information to eligible entities  
2       on—

3           (A) the activities described in subsections  
4       (c)(1) and (d); and  
5           (B) potential and existing energy storage  
6       and microgrid projects.

7       (b) COOPERATIVE AGREEMENT.—The Secretary may  
8       enter into a cooperative agreement with an eligible entity  
9       to carry out subsection (a).

10       (c) GRANTS.—

11           (1) IN GENERAL.—The Secretary shall award  
12       grants to eligible entities for identifying, evaluating,  
13       designing, and demonstrating energy storage and  
14       microgrid projects that utilize energy from renewable  
15       energy sources.

16           (2) APPLICATION.—To be eligible to receive a  
17       grant under paragraph (1), an eligible entity shall  
18       submit to the Secretary an application at such time,  
19       in such manner, and containing such information as  
20       the Secretary may require.

21           (3) USE OF GRANT.—An eligible entity that re-  
22       ceives a grant under paragraph (1)—

23           (A) shall use the grant—

24                   (i) to conduct feasibility studies to as-  
25       sess the potential for implementation or

1 improvement of energy storage or  
2 microgrid projects;

3 (ii) to analyze and implement strate-  
4 gies to overcome barriers to energy storage  
5 or microgrid project implementation, in-  
6 cluding financial, contracting, siting, and  
7 permitting barriers;

8 (iii) to conduct detailed engineering of  
9 energy storage or microgrid projects;

10 (iv) to perform a cost-benefit analysis  
11 with respect to an energy storage or  
12 microgrid project;

13 (v) to plan for both the short- and  
14 long-term inclusion of energy storage or  
15 microgrid projects into the future develop-  
16 ment plans of the eligible entity; or

17 (vi) to purchase and install necessary  
18 equipment, materials, and supplies for  
19 demonstration of emerging technologies;  
20 and

21 (B) may use the grant to obtain technical  
22 assistance from experts in carrying out the ac-  
23 tivities described in subparagraph (A).

24 (4) CONDITION.—As a condition of receiving a  
25 grant under paragraph (1), an eligible entity shall—

1 (A) implement a public awareness cam-  
2 paign, in coordination with the Secretary, about  
3 the project implemented under the grant in the  
4 community in which the eligible entity is lo-  
5 cated;

6 (B) submit to the Secretary, and make  
7 available to the public, a report that de-  
8 scribes—

9 (i) any energy cost savings and envi-  
10 ronmental benefits achieved under the  
11 project; and

12 (ii) the results of the project, includ-  
13 ing quantitative assessments to the extent  
14 practicable, associated with each activity  
15 described in paragraph (3)(A); and

16 (C) create and disseminate tools and re-  
17 sources that will benefit other rural electric co-  
18 operatives, which may include cost calculators,  
19 guidebooks, handbooks, templates, and training  
20 courses.

21 (5) COST-SHARE.—Activities under this sub-  
22 section shall be subject to the cost-sharing require-  
23 ments of section 988 of the Energy Policy Act of  
24 2005 (42 U.S.C. 16352).

25 (d) TECHNICAL ASSISTANCE.—



1           (1) IN GENERAL.—In carrying out the program  
2           established under subsection (a), the Secretary shall  
3           provide eligible entities with technical assistance re-  
4           lating to—

5                   (A) identifying opportunities for energy  
6                   storage and microgrid projects;

7                   (B) understanding the technical and eco-  
8                   nomic characteristics of energy storage or  
9                   microgrid projects;

10                  (C) understanding financing alternatives;

11                  (D) permitting and siting issues;

12                  (E) obtaining case studies of similar and  
13                  successful energy storage or microgrid projects;

14                  (F) reviewing and obtaining computer soft-  
15                  ware for assessment, design, and operation and  
16                  maintenance of energy storage or microgrid sys-  
17                  tems; and

18                  (G) understanding and utilizing the reli-  
19                  ability and resiliency benefits of energy storage  
20                  and microgrid projects.

21           (2) EXTERNAL CONTRACTS.—In carrying out  
22           paragraph (1), the Secretary may enter into con-  
23           tracts with third-party experts, including engineer-  
24           ing, finance, and insurance experts, to provide tech-  
25           nical assistance to eligible entities relating to the ac-

1       activities described in such paragraph, or other rel-  
2       evant activities, as determined by the Secretary.

3   **SEC. 2123. AUTHORIZATION OF APPROPRIATIONS.**

4       (a) IN GENERAL.—There is authorized to be appro-  
5       priated to carry out this part \$5,000,000 for each of fiscal  
6       years 2021 through 2025.

7       (b) ADMINISTRATIVE COSTS.—Not more than 5 per-  
8       cent of the amount appropriated under subsection (a) for  
9       each fiscal year shall be used for administrative expenses.

10                   **Subtitle B—Dam Safety**

11   **SEC. 2201. HYDROELECTRIC PRODUCTION INCENTIVES**  
12                   **AND EFFICIENCY IMPROVEMENTS.**

13       (a) HYDROELECTRIC PRODUCTION INCENTIVES.—  
14       Section 242 of the Energy Policy Act of 2005 (42 U.S.C.  
15       15881) is amended—

16               (1) in subsection (b), by striking paragraph (1)  
17       and inserting the following:

18               “(1) QUALIFIED HYDROELECTRIC FACILITY.—

19       The term ‘qualified hydroelectric facility’ means a  
20       turbine or other generating device owned or solely  
21       operated by a non-Federal entity—

22               “(A) that generates hydroelectric energy  
23       for sale; and

24               “(B)(i) that is added to an existing dam or  
25       conduit; or

1 “(ii)(I) that has a generating capacity of  
2 not more than 10 megawatts;

3 “(II) for which the non-Federal entity has  
4 received a construction authorization from the  
5 Federal Energy Regulatory Commission, if ap-  
6 plicable; and

7 “(III) that is constructed in a region in  
8 which there is inadequate electric service, as de-  
9 termined by the Secretary.”;

10 (2) in subsection (c), by striking “10” and in-  
11 serting “22”;

12 (3) in subsection (e)(2), by striking “section  
13 29(d)(2)(B)” and inserting “section 45K(d)(2)(B)”;

14 (4) in subsection (f), by striking “20” and in-  
15 serting “32”; and

16 (5) in subsection (g), by striking “each of the  
17 fiscal years 2006 through 2015” and inserting “each  
18 of fiscal years 2019 through 2036”.

19 (b) HYDROELECTRIC EFFICIENCY IMPROVEMENT.—  
20 Section 243(c) of the Energy Policy Act of 2005 (42  
21 U.S.C. 15882(c)) is amended by striking “each of the fis-  
22 cal years 2006 through 2015” and inserting “each of fis-  
23 cal years 2019 through 2036”.

1 **SEC. 2202. FERC BRIEFING ON EDENVILLE DAM AND SAN-**  
2 **FORD DAM FAILURES.**

3 Not later than 90 days after the date on which the  
4 Forensic Investigation Team submits to the Federal En-  
5 ergy Regulatory Commission the reports on the root  
6 causes, and any other contributing causes, of the Edenville  
7 Dam and Sanford Dam failures, the Federal Energy Reg-  
8 ulatory Commission shall conduct a briefing for, and sub-  
9 mit a report summarizing such briefing to, the Committee  
10 on Energy and Commerce of the House of Representatives  
11 that includes—

12 (1) an explanation of the findings of the Foren-  
13 sic Investigation Team reports on the root causes,  
14 and any other contributing causes, of the Edenville  
15 Dam and Sanford Dam failures;

16 (2) a determination of whether the dam safety  
17 procedures of the Federal Energy Regulatory Com-  
18 mission should be revised in light of the lessons  
19 learned from such reports;

20 (3) a determination of whether additional safety  
21 inspections of dams should be required after large  
22 storms;

23 (4) a determination of whether the safety re-  
24 quirements and testing protocols for dams ade-  
25 quately account for the projected effects of climate  
26 change and atmospheric rivers on dams; and

1           (5) a determination of whether additional ac-  
2           tions should be taken to ensure the safety of dams  
3           that operate without an emergency spillway.

4   **SEC. 2203. DAM SAFETY CONDITIONS.**

5           Section 10 of the Federal Power Act (16 U.S.C. 803)  
6   is amended by adding at the end the following:

7           “(k) That the dam and other project works meet the  
8   Commission’s dam safety requirements and that the li-  
9   censee shall continue to manage, operate, and maintain  
10   the dam and other project works in a manner that ensures  
11   dam safety and public safety under the operating condi-  
12   tions of the license.”.

13   **SEC. 2204. DAM SAFETY REQUIREMENTS.**

14           Section 15 of the Federal Power Act (16 U.S.C. 808)  
15   is amended by adding at the end the following:

16           “(g) The Commission may issue a new license under  
17   this section only if the Commission determines that the  
18   dam and other project works covered by the license meet  
19   the Commission’s dam safety requirements and that the  
20   licensee can continue to manage, operate, and maintain  
21   the dam and other project works in a manner that ensures  
22   dam safety and public safety under the operating condi-  
23   tions of the new license.”.

1 **SEC. 2205. VIABILITY PROCEDURES.**

2       The Federal Energy Regulatory Commission shall es-  
3 tablish procedures to assess the financial viability of an  
4 applicant for a license under the Federal Power Act to  
5 meet applicable dam safety requirements and to operate  
6 the dam and project works under the license.

7 **SEC. 2206. FERC DAM SAFETY TECHNICAL CONFERENCE**  
8 **WITH STATES.**

9       (a) TECHNICAL CONFERENCE.—Not later than April  
10 1, 2021, the Federal Energy Regulatory Commission, act-  
11 ing through the Office of Energy Projects, shall hold a  
12 technical conference with the States to discuss and provide  
13 information on—

- 14           (1) dam maintenance and repair;  
15           (2) Risk Informed Decision Making (RIDM);  
16           (3) climate and hydrological regional changes  
17 that may affect the structural integrity of dams; and  
18           (4) high hazard dams.

19       (b) AUTHORIZATION OF APPROPRIATIONS.—There is  
20 authorized to be appropriated to carry out this section  
21 \$1,000,000 for fiscal year 2021.

22       (c) STATE DEFINED.—In this section, the term  
23 “State” has the meaning given such term in section 3 of  
24 the Federal Power Act (16 U.S.C. 796).

1 **SEC. 2207. REQUIRED DAM SAFETY COMMUNICATIONS BE-**  
2 **TWEEN FERC AND STATES.**

3 (a) IN GENERAL.—The Commission, acting through  
4 the Office of Energy Projects, shall notify a State within  
5 which a project is located when—

6 (1) the Commission issues a finding, following  
7 a dam safety inspection, that requires the licensee  
8 for such project to take actions to repair the dam  
9 and other project works that are the subject of such  
10 finding;

11 (2) after a period of 5 years starting on the  
12 date a finding under paragraph (1) is issued, the li-  
13 censee has failed to take actions to repair the dam  
14 and other project works, as required by such finding;  
15 and

16 (3) the Commission initiates a non-compliance  
17 proceeding or otherwise takes steps to revoke a li-  
18 cense issued under section 4 of the Federal Power  
19 Act (16 U.S.C. 797) due to the failure of a licensee  
20 to take actions to repair a dam and other project  
21 works.

22 (b) NOTICE UPON REVOCATION, SURRENDER, OR IM-  
23 PLIED SURRENDER OF A LICENSE.—If the Commission  
24 issues an order to revoke a license or approve the sur-  
25 render or implied surrender of a license under the Federal  
26 Power Act (16 U.S.C. 792 et seq.), the Commission shall

1 provide to the State within which the project that relates  
2 to such license is located—

3 (1) all records pertaining to the structure and  
4 operation of the applicable dam and other project  
5 works, including, as applicable, any dam safety in-  
6 spection reports by independent consultants, speci-  
7 fications for required repairs or maintenance of such  
8 dam and other project works that have not been  
9 completed, and estimates of the costs for such re-  
10 pairs or maintenance;

11 (2) all records documenting the history of main-  
12 tenance or repair work for the applicable dam and  
13 other project works;

14 (3) information on the age of the dam and  
15 other project works and the hazard classification of  
16 the dam and other project works;

17 (4) the most recent assessment of the condition  
18 of the dam and other project works by the Commis-  
19 sion;

20 (5) as applicable, the most recent hydrologic in-  
21 formation used to determine the potential maximum  
22 flood for the dam and other project works; and

23 (6) the results of the most recent risk assess-  
24 ment completed on the dam and other project works.

25 (c) DEFINITION.—In this section:



1 (1) COMMISSION.—The term “Commission”  
2 means the Federal Energy Regulatory Commission.

3 (2) LICENSEE.—The term “licensee” has the  
4 meaning given such term in section 3 of the Federal  
5 Power Act (16 U.S.C. 796).

6 (3) PROJECT.—The term “project” has the  
7 meaning given such term in section 3 of the Federal  
8 Power Act (16 U.S.C. 796).

## 9 **Subtitle C—Distributed Renewable** 10 **Energy**

### 11 **SEC. 2301. DEFINITIONS.**

12 In this subtitle:

13 (1) AUTHORITY HAVING JURISDICTION.—The  
14 term “authority having jurisdiction” means any  
15 State, county, local, or Tribal office or official with  
16 jurisdiction—

17 (A) to issue permits;

18 (B) to conduct inspections to enforce the  
19 requirements of a relevant code or standard; or

20 (C) to approve the installation of, or the  
21 equipment and materials used in the installa-  
22 tion of, qualifying distributed energy systems.

23 (2) BOARD.—The term “Board” means the  
24 Distributed Energy Opportunity Board established  
25 or designated under section 2302(a).

1           (3) DISTRIBUTED ENERGY SYSTEM IN-  
2       STALLER.—The term “distributed energy system in-  
3       staller” means an entity or individual—

4           (A) with knowledge and skills relating to—

5               (i) the construction and operation of  
6       the equipment used in qualifying distrib-  
7       uted energy systems; and

8               (ii) the installation of qualifying dis-  
9       tributed energy systems; and

10          (B) that has employed safety training to  
11       recognize and avoid the hazards involved in con-  
12       structing, operating, and installing qualifying  
13       distributed energy systems.

14          (4) QUALIFYING DISTRIBUTED ENERGY SYS-  
15       TEM.—The term “qualifying distributed energy sys-  
16       tem” means any equipment or materials installed in,  
17       on, or near a residential, commercial, or industrial  
18       building to support onsite or local energy use, in-  
19       cluding—

20           (A) to generate electricity from distributed  
21       renewable energy sources, including from—

22               (i) solar photovoltaic modules or simi-  
23       lar solar energy technologies;

24               (ii) wind power systems; and

1 (iii) hydrogen electrolysis and fuel cell  
2 systems;

3 (B) to store and discharge electricity from  
4 batteries with a capacity of at least 2 kilowatt  
5 hours;

6 (C) to charge a plug-in electric drive vehi-  
7 cle at a power rate of at least 2 kilowatts;

8 (D) to refuel a fuel cell electric vehicle; or

9 (E) to store and discharge electricity from  
10 fuel cell systems with a capacity of at least 2  
11 kilowatt hours.

12 (5) SECRETARY.—The term “Secretary” means  
13 the Secretary of Energy.

14 **SEC. 2302. ESTABLISHMENT OR DESIGNATION OF THE DIS-**  
15 **TRIBUTED ENERGY OPPORTUNITY BOARD.**

16 (a) IN GENERAL.—Not later than 180 days after the  
17 date of enactment of this Act, the Secretary, in consulta-  
18 tion with trade associations and other entities representing  
19 distributed energy system installers and organizations rep-  
20 resenting State, local, and Tribal governments engaged in  
21 permitting, shall establish or designate a nonprofit cor-  
22 poration, to be known as the “Distributed Energy Oppor-  
23 tunity Board”, to carry out a program to streamline the  
24 process for local permitting and inspection of qualifying  
25 distributed energy systems.

1 (b) COMPOSITION.—The Board shall include rep-  
2 resentatives from—

3 (1) relevant Federal agencies, or organizations  
4 that represent those agencies;

5 (2) State, local, and Tribal governments, or or-  
6 ganizations that represent those governments;

7 (3) distributed energy generation companies;

8 (4) battery storage companies;

9 (5) associations that represent the distributed  
10 energy generation and battery storage industry;

11 (6) building code agencies and organizations,  
12 including a model energy code-setting organization;

13 (7) other codes and standards organizations;  
14 and

15 (8) fuel cell system companies.

16 (c) PURPOSE AND ACTIVITIES OF THE BOARD.—

17 (1) PURPOSE.—The purpose of the Board is to  
18 establish a voluntary program for facilitating—

19 (A) streamlined permitting processes of  
20 qualifying distributed energy systems; and

21 (B) certification of distributed energy sys-  
22 tem installers.

23 (2) ACTIVITIES.—The Board shall—

24 (A) develop and maintain a streamlined  
25 permitting process, such as a national online

1           permitting system and technology platform for  
2           expediting, standardizing, and streamlining per-  
3           mitting, that authorities having jurisdiction  
4           may use, at the discretion of those authorities,  
5           to receive, review, and approve permit applica-  
6           tions relating to qualifying distributed energy  
7           systems;

8           (B) establish a model expedited permit-to-  
9           build protocol for qualifying distributed energy  
10          systems;

11          (C) provide technical assistance to authori-  
12          ties having jurisdiction on using and adopting—

13               (i) the streamlined permitting process  
14               described in subparagraph (A); and

15               (ii) the model expedited permit-to-  
16               build protocol described in subparagraph  
17               (B);

18          (D)(i) investigate the development of vol-  
19          untary national certifications for distributed en-  
20          ergy system installers and qualifying distributed  
21          energy systems; and

22               (ii) if the Board determines that the na-  
23          tional certifications would expedite and stream-  
24          line the permitting and inspection process, de-  
25          velop the voluntary national certifications;

1           (E) develop and maintain a voluntary na-  
2           tional inspection protocol integrated with the  
3           national online permitting system described in  
4           subparagraphs (A) and (B) and related tools to  
5           expedite, standardize, and streamline the in-  
6           spection of qualifying distributed energy sys-  
7           tems, including—

8                   (i) by investigating the potential for  
9                   using remote inspections; and

10                   (ii) by investigating the potential for  
11                   sample-based inspection for distributed en-  
12                   ergy system installers with a demonstrated  
13                   track record of high-quality work; and

14           (F) take any other action to expedite,  
15           standardize, streamline, or improve the process  
16           for permitting, inspecting, or interconnecting  
17           qualifying distributed energy systems.

18       (d) FEE AUTHORITY.—The Board may assess fees  
19       for the provision of services by the Board in amounts de-  
20       termined reasonable and appropriate by the Board, includ-  
21       ing fees from participating distributed energy system in-  
22       stallers relating to the activities of the Board described  
23       in subsection (c)(2).

24       (e) SUPPORT SERVICES.—The Secretary shall—

1           (1) provide technical assistance to the Board in  
2       carrying out the activities described in subsection  
3       (c)(2); and

4           (2) provide such financial assistance to the  
5       Board as the Secretary determines to be appropriate  
6       from any funds appropriated to carry out this sub-  
7       title.

8       **SEC. 2303. DISTRIBUTED ENERGY OPPORTUNITY COMMU-**  
9                               **NITIES.**

10       (a) IN GENERAL.—The Secretary shall recognize and  
11       certify certain communities as “Distributed Energy Op-  
12       portunity Communities”.

13       (b) QUALIFICATIONS.—The Secretary may certify a  
14       State, local community, or Tribe as a “Distributed Energy  
15       Opportunity Community” if that State, local community,  
16       or Tribe has adopted and implemented the model expe-  
17       dited permit-to-build protocol established by the Board.

18       (c) PROCESS.—The Secretary may confer a certifi-  
19       cation under subsection (a) through existing programs of  
20       the Department of Energy.

21       (d) GRANTS.—The Secretary may award competitive  
22       grants, using funds appropriated to the Secretary to carry  
23       out this subtitle, to encourage communities to adopt the  
24       model expedited permit-to-build protocol and standardized  
25       inspection processes established by the Board.

1 **SEC. 2304. AUTHORIZATION OF APPROPRIATIONS.**

2       There is authorized to be appropriated to the Sec-  
3 retary to carry out this subtitle \$20,000,000 for each of  
4 fiscal years 2021 through 2025.

5 **Subtitle D—Low-income Solar**

6 **SEC. 2401. GRANT PROGRAM FOR SOLAR INSTALLATIONS**  
7 **LOCATED IN, OR THAT SERVE, LOW-INCOME**  
8 **AND UNDERSERVED AREAS.**

9 (a) DEFINITIONS.—In this section:

10       (1) BENEFICIARY.—The term “beneficiary”  
11 means a low-income household or a low-income  
12 household in an underserved area.

13       (2) COMMUNITY SOLAR FACILITY.—The term  
14 “community solar facility” means a solar generating  
15 facility that—

16           (A) through a voluntary program, has mul-  
17 tiple subscribers that receive financial benefits  
18 that are directly attributable to the facility;

19           (B) has a nameplate rating of 5 megawatts  
20 AC or less; and

21           (C) is located in the utility distribution  
22 service territory of subscribers.

23       (3) COMMUNITY SOLAR SUBSCRIPTION.—The  
24 term “community solar subscription” means a share  
25 in the capacity, or a proportional interest in the elec-  
26 tricity generation, of a community solar facility.



1 (4) COVERED FACILITY.—The term “covered  
2 facility” means—

3 (A) a community solar facility—

4 (i) that is located in an underserved  
5 area; or

6 (ii) at least 50 percent of the capacity  
7 of which is reserved for low-income house-  
8 holds;

9 (B) a solar generating facility located at a  
10 residence of a low-income household; or

11 (C) a solar generating facility located at a  
12 multi-family affordable housing complex.

13 (5) COVERED STATE.—The term “covered  
14 State” means a State with processes in place to en-  
15 sure that covered facilities deliver financial benefits  
16 to low-income households.

17 (6) ELIGIBLE ENTITY.—The term “eligible enti-  
18 ty” means—

19 (A) a nonprofit organization that provides  
20 services to low-income households or multi-fam-  
21 ily affordable housing complexes;

22 (B) a developer, owner, or operator of a  
23 community solar facility that reserves a portion  
24 of the capacity of the facility for subscribers  
25 who are members of low-income households or

1 for low-income households that otherwise finan-  
2 cially benefit from the facility;

3 (C) a covered State, or political subdivision  
4 thereof;

5 (D) an Indian Tribe or a tribally owned  
6 electric utility;

7 (E) a Native Hawaiian community-based  
8 organization;

9 (F) any other national or regional entity  
10 that has experience developing or installing  
11 solar generating facilities for low-income house-  
12 holds that maximize financial benefits to those  
13 households; and

14 (G) an electric cooperative or municipal  
15 electric utility (as such terms are defined in sec-  
16 tion 3 of the Federal Power Act).

17 (7) ELIGIBLE INSTALLATION PROJECT.—The  
18 term “eligible installation project” means a project  
19 to install a covered facility in a covered State.

20 (8) ELIGIBLE PLANNING PROJECT.—The term  
21 “eligible planning project” means a project to carry  
22 out pre-installation activities for the development of  
23 a covered facility in a covered State.

24 (9) ELIGIBLE PROJECT.—The term “eligible  
25 project” means—

1 (A) an eligible planning project; or

2 (B) an eligible installation project.

3 (10) FEASIBILITY STUDY.—The term “feasi-  
4 bility study” means any activity to determine the  
5 feasibility of a specific solar generating facility, in-  
6 cluding a customer interest assessment and a siting  
7 assessment, as determined by the Secretary.

8 (11) INDIAN TRIBE.—The term “Indian Tribe”  
9 means any Indian Tribe, band, nation, or other or-  
10 ganized group or community, including any Alaska  
11 Native village, Regional Corporation, or Village Cor-  
12 poration (as defined in, or established pursuant to,  
13 the Alaska Native Claims Settlement Act (43 U.S.C.  
14 1601 et seq.)), that is recognized as eligible for the  
15 special programs and services provided by the  
16 United States to Indians because of their status as  
17 Indians.

18 (12) INTERCONNECTION SERVICE.—The term  
19 “interconnection service” has the meaning given  
20 such term in section 111(d)(15) of the Public Utility  
21 Regulatory Policies Act of 1978 (16 U.S.C.  
22 2621(d)(15)).

23 (13) LOW-INCOME HOUSEHOLD.—The term  
24 “low-income household” means that income in rela-  
25 tion to family size which—

1 (A) is at or below 200 percent of the pov-  
2 erty level determined in accordance with criteria  
3 established by the Director of the Office of  
4 Management and Budget, except that the Sec-  
5 retary may establish a higher level if the Sec-  
6 retary determines that such a higher level is  
7 necessary to carry out the purposes of this sec-  
8 tion;

9 (B) is the basis on which cash assistance  
10 payments have been paid during the preceding  
11 12-month period under titles IV and XVI of the  
12 Social Security Act (42 U.S.C. 601 et seq.,  
13 1381 et seq.) or applicable State or local law;  
14 or

15 (C) if a State elects, is the basis for eligi-  
16 bility for assistance under the Low-Income  
17 Home Energy Assistance Act of 1981 (42  
18 U.S.C. 8621 et seq.), provided that such basis  
19 is at least 200 percent of the poverty level de-  
20 termined in accordance with criteria established  
21 by the Director of the Office of Management  
22 and Budget.

23 (14) MULTI-FAMILY AFFORDABLE HOUSING  
24 COMPLEX.—The term “multi-family affordable hous-  
25 ing complex” means any federally subsidized afford-

1       able housing complex in which at least 50 percent of  
2       the units are reserved for low-income households.

3           (15) NATIVE HAWAIIAN COMMUNITY-BASED OR-  
4       GANIZATION.—The term “Native Hawaiian commu-  
5       nity-based organization” means any organization  
6       that is composed primarily of Native Hawaiians  
7       from a specific community and that assists in the  
8       social, cultural, and educational development of Na-  
9       tive Hawaiians in that community.

10          (16) PROGRAM.—The term “program” means  
11       the program established under subsection (b).

12          (17) SECRETARY.—The term “Secretary”  
13       means the Secretary of Energy.

14          (18) SOLAR GENERATING FACILITY.—The term  
15       “solar generating facility” means—

16           (A) a generator that creates electricity  
17       from light photons; and

18           (B) the accompanying hardware enabling  
19       that electricity to flow—

20           (i) onto the electric grid;

21           (ii) into a facility or structure; or

22           (iii) into an energy storage device.

23          (19) STATE.—The term “State” means each of  
24       the 50 States, the District of Columbia, Guam, the  
25       Commonwealth of Puerto Rico, the Northern Mar-

1       iana Islands, the Virgin Islands, and American  
2       Samoa.

3           (20) SUBSCRIBER.—The term “subscriber”  
4       means a person who—

5           (A) owns a community solar subscription,  
6           or an equivalent unit or share of the capacity  
7           or generation of a community solar facility; or

8           (B) financially benefits from a community  
9           solar facility, even if the person does not own  
10          a community solar subscription for the facility.

11          (21) UNDERSERVED AREA.—The term “under-  
12       served area” means—

13           (A) a geographical area with low or no  
14           photovoltaic solar deployment, as determined by  
15           the Secretary;

16           (B) a geographical area that has low or no  
17           access to electricity, as determined by the Sec-  
18           retary;

19           (C) a geographical area with an average  
20           annual residential retail electricity price that  
21           exceeds the national average annual residential  
22           retail electricity price (as reported by the En-  
23           ergy Information Agency) by 50 percent or  
24           more; or

1 (D) trust land, as defined in section 3765  
2 of title 38, United States Code.

3 (b) ESTABLISHMENT.—The Secretary shall establish  
4 a program to provide financial assistance to eligible enti-  
5 ties to—

6 (1) carry out planning projects that are nec-  
7 essary to establish the feasibility, obtain required  
8 permits, identify beneficiaries, or secure subscribers  
9 to install a covered facility; or

10 (2) install a covered facility for beneficiaries in  
11 accordance with this section.

12 (c) APPLICATIONS.—

13 (1) IN GENERAL.—To be eligible to receive as-  
14 sistance under the program, an eligible entity shall  
15 submit to the Secretary an application at such time,  
16 in such manner, and containing such information as  
17 the Secretary may require.

18 (2) INCLUSION FOR INSTALLATION ASSIST-  
19 ANCE.—

20 (A) REQUIREMENTS.—For an eligible enti-  
21 ty to receive assistance for a project to install  
22 a covered facility, the Secretary shall require  
23 the eligible entity to include—

24 (i) information in the application that  
25 is sufficient to demonstrate that the eligi-

1           ble entity has obtained, or has the capacity  
2           to obtain, necessary permits, subscribers,  
3           access to an installation site, and any other  
4           items or agreements necessary to comply  
5           with an agreement under subsection (g)(1)  
6           and to complete the installation of the ap-  
7           plicable covered facility;

8                   (ii) a description of the mechanism  
9                   through which financial benefits will be  
10                  distributed to beneficiaries or subscribers;  
11                  and

12                   (iii) an estimate of the anticipated fi-  
13                  nancial benefit for beneficiaries or sub-  
14                  scribers.

15           (B)    CONSIDERATION    OF    PLANNING  
16           PROJECTS.—The Secretary shall consider the  
17           successful completion of an eligible planning  
18           project pursuant to subsection (b)(1) by the eli-  
19           gible entity to be sufficient to demonstrate the  
20           ability of the eligible entity to meet the require-  
21           ments of subparagraph (A)(i).

22           (d) SELECTION.—

23                   (1) IN GENERAL.—In selecting eligible projects  
24           to receive assistance under the program, the Sec-  
25           retary shall—



1 (A) prioritize—

2 (i) eligible installation projects that  
3 will result in the most financial benefit for  
4 subscribers, as determined by the Sec-  
5 retary;

6 (ii) eligible installation projects that  
7 will result in development of covered facili-  
8 ties in underserved areas; and

9 (iii) eligible projects that include ap-  
10 prenticeship, job training, or community  
11 participation as part of their application;  
12 and

13 (B) ensure that such assistance is provided  
14 in a manner that results in eligible projects  
15 being carried out on a geographically diverse  
16 basis within and among covered States.

17 (2) DETERMINATION OF FINANCIAL BEN-  
18 EFIT.—In determining the amount of financial ben-  
19 efit for low-income households of an eligible installa-  
20 tion project, the Secretary shall ensure that all cal-  
21 culations for estimated household energy savings are  
22 based solely on electricity offsets from the applicable  
23 covered facility and use formulas established by the  
24 State or local government with jurisdiction over the  
25 applicable covered facility for verifiable household

1 energy savings estimates that accrue to low-income  
2 households.

3 (e) ASSISTANCE.—

4 (1) FORM.—The Secretary may provide assist-  
5 ance under the program in the form of a grant  
6 (which may be in the form of a rebate) or a low-in-  
7 terest loan.

8 (2) MULTIPLE PROJECTS FOR SAME FACIL-  
9 ITY.—

10 (A) IN GENERAL.—An eligible entity may  
11 apply for assistance under the program for an  
12 eligible planning project and an eligible installa-  
13 tion project for the same covered facility.

14 (B) SEPARATE SELECTIONS.—Selection by  
15 the Secretary for assistance under the program  
16 of an eligible planning project does not require  
17 the Secretary to select for assistance under the  
18 program an eligible installation project for the  
19 same covered facility.

20 (f) USE OF ASSISTANCE.—

21 (1) ELIGIBLE PLANNING PROJECTS.—An eligi-  
22 ble entity receiving assistance for an eligible plan-  
23 ning project under the program may use such assist-  
24 ance to pay the costs of pre-installation activities as-

1       sociated with an applicable covered facility, includ-  
2       ing—

3               (A) feasibility studies;

4               (B) permitting;

5               (C) site assessment;

6               (D) on-site job training, or other commu-  
7       nity-based activities directly associated with the  
8       eligible planning project; or

9               (E) such other costs determined by the  
10       Secretary to be appropriate.

11       (2) ELIGIBLE INSTALLATION PROJECTS.—An  
12       eligible entity receiving assistance for an eligible in-  
13       stallation project under the program may use such  
14       assistance to pay the costs of—

15               (A) installation of a covered facility, in-  
16       cluding costs associated with materials, permit-  
17       ting, labor, or site preparation;

18               (B) storage technology sited at a covered  
19       facility;

20               (C) interconnection service expenses;

21               (D) on-site job training, or other commu-  
22       nity-based activities directly associated with the  
23       eligible installation project;

24               (E) offsetting the cost of a subscription for  
25       a covered facility described in subparagraph (A)

1 of subsection (a)(4) for subscribers that are  
2 members of a low income household; or

3 (F) such other costs determined by the  
4 Secretary to be appropriate.

5 (g) ADMINISTRATION.—

6 (1) AGREEMENTS.—

7 (A) IN GENERAL.—As a condition of re-  
8 ceiving assistance under the program, an eligi-  
9 ble entity shall enter into an agreement with  
10 the Secretary.

11 (B) REQUIREMENTS.—An agreement en-  
12 tered into under this paragraph—

13 (i) shall require the eligible entity to  
14 maintain such records and adopt such ad-  
15 ministrative practices as the Secretary may  
16 require to ensure compliance with the re-  
17 quirements of this section and the agree-  
18 ment;

19 (ii) with respect to an eligible installa-  
20 tion project shall require that any solar  
21 generating facility installed using assist-  
22 ance provided pursuant to the agreement  
23 comply with local building and safety codes  
24 and standards; and

1 (iii) shall contain such other terms as  
2 the Secretary may require to ensure com-  
3 pliance with the requirements of this sec-  
4 tion.

5 (C) TERM.—An agreement under this  
6 paragraph shall be for a term that begins on  
7 the date on which the agreement is entered into  
8 and ends on the date that is 2 years after the  
9 date on which the eligible entity receives assist-  
10 ance pursuant to the agreement, which term  
11 may be extended once for a period of not more  
12 than 1 year if the eligible entity demonstrates  
13 to the satisfaction of the Secretary that such an  
14 extension is necessary to complete the activities  
15 required by the agreement.

16 (2) USE OF FUNDS.—Of the funds made avail-  
17 able to provide assistance to eligible installation  
18 projects under this section over the period of fiscal  
19 years 2021 through 2025, the Secretary shall use—

20 (A) not less than 50 percent to provide as-  
21 sistance for eligible installation projects with re-  
22 spect to which low-income households make up  
23 at least 50 percent of the subscribers to the  
24 project; and

1 (B) not more than 50 percent to provide  
2 assistance for eligible installation projects with  
3 respect to which low-income households make  
4 up at least 25 percent of the subscribers to the  
5 project.

6 (3) REGULATIONS.—Not later than 120 days  
7 after the date of enactment of this Act, the Sec-  
8 retary shall publish in the Federal Register regula-  
9 tions to carry out this section, which shall take ef-  
10 fect on the date of publication.

11 (h) AUTHORIZATION OF APPROPRIATIONS.—

12 (1) IN GENERAL.—There is authorized to be  
13 appropriated to the Secretary to carry out this sec-  
14 tion \$200,000,000 for each of fiscal years 2021  
15 through 2025, to remain available until expended.

16 (2) AMOUNTS FOR PLANNING PROJECTS.—Of  
17 the amounts appropriated pursuant to this section  
18 over the period of fiscal years 2021 through 2025,  
19 the Secretary shall use not more than 15 percent of  
20 funds to provide assistance to eligible planning  
21 projects.

22 (i) RELATIONSHIP TO OTHER ASSISTANCE.—The  
23 Secretary shall, to the extent practicable, encourage eligi-  
24 ble entities that receive assistance under this section to  
25 leverage such funds by seeking additional funding through

1 federally or locally subsidized weatherization and energy  
2 efficiency programs.

3 **Subtitle E—Research and**  
4 **Development**

5 **PART 1—SOLAR ENERGY RESEARCH AND**  
6 **DEVELOPMENT**

7 **SEC. 2501. DEFINITIONS.**

8 In this part:

9 (1) The term “eligible entity” means any of the  
10 following entities:

11 (A) An institution of higher education.

12 (B) A National Laboratory.

13 (C) A Federal research agency.

14 (D) A State research agency.

15 (E) A nonprofit research organization.

16 (F) An industrial entity or a multi-institu-  
17 tional consortium thereof.

18 (2) The term “institution of higher education”  
19 has the meaning given such term in section 101 of  
20 the Higher Education Act of 1965 (20 U.S.C.  
21 1001).

22 (3) The term “National Laboratory” has the  
23 meaning given such term in section 2(3) of the En-  
24 ergy Policy Act of 2005 (42 U.S.C. 15801(3)).

1           (4) The term “photovoltaic device” includes  
2       photovoltaic cells and the electronic and electrical  
3       components of such devices.

4           (5) The term “Secretary” means the Secretary  
5       of Energy.

6       **SEC. 2502. SOLAR ENERGY RESEARCH AND DEVELOPMENT.**

7       (a) IN GENERAL.—The Secretary shall carry out a  
8       solar energy program to conduct research, development,  
9       demonstration, and commercial application of solar energy  
10      technologies. In carrying out such program, the Secretary  
11      shall, in accordance with subsection (b), award grants and  
12      enter into contracts and cooperative agreements under  
13      this section, and sections 2503, 2504, and 2505 for each  
14      of the following purposes:

15           (1) To improve the energy efficiency, siting, re-  
16      liability, resilience, security, capacity, and environ-  
17      mental performance of solar energy generation.

18           (2) To optimize the design and adaptability of  
19      solar energy systems to the broadest practical range  
20      of geographic and atmospheric conditions.

21           (3) To reduce the cost of manufacturing, instal-  
22      lation, operation, maintenance, and decommissioning  
23      of solar energy systems.

24           (4) To create and improve conversion of solar  
25      energy to useful forms.



1 (b) GRANTS, CONTRACTS, AND COOPERATIVE  
2 AGREEMENTS.—

3 (1) GRANTS.—In carrying out the program es-  
4 tablished under subsection (a), the Secretary shall  
5 award grants on a competitive, merit-reviewed basis  
6 to eligible entities for projects that the Secretary de-  
7 termines would best achieve the goals of the pro-  
8 gram.

9 (2) CONTRACTS AND COOPERATIVE AGREE-  
10 MENTS.—In carrying out the program established  
11 under subsection (a), the Secretary may enter into  
12 contracts and cooperative agreements with eligible  
13 entities and Federal agencies for projects that the  
14 Secretary determines would further the purposes of  
15 the program.

16 (3) APPLICATION.—An entity seeking a grant  
17 or a contract or agreement under this part shall sub-  
18 mit to the Secretary an application at such time, in  
19 such manner, and containing such information as  
20 the Secretary may require.

21 (c) SOLAR ENERGY RESEARCH SUBJECT AREAS.—  
22 The program established under subsection (a) shall focus  
23 on the research, development, demonstration, and com-  
24 mercial application of each of the following subject areas:

1           (1) Photovoltaic devices and related electronic  
2           components, including converters, sensors, energy  
3           monitors, communication and control equipment,  
4           and protocols.

5           (2) Concentrated solar power, including solar  
6           thermal and concentrating solar photovoltaic tech-  
7           nologies.

8           (3) Low cost, high-quality solar energy systems.

9           (4) Low cost, thin-film solar technologies, in-  
10          cluding the use of perovskite and cadmium telluride  
11          materials in solar cells.

12          (5) Solar heating and cooling systems, including  
13          distributed solar-powered air conditioning.

14          (6) Solar technology products that can be easily  
15          integrated into new buildings, existing buildings, ag-  
16          ricultural and aquatic environments, and other infra-  
17          structure.

18          (7) Solar technology that is resilient to extreme  
19          weather events.

20          (8) Solar technology products integrated into  
21          transportation applications in coordination with vehi-  
22          cle technologies research and development activities  
23          supported by the Department of Energy.

24          (9) Storage technologies to address the tran-  
25          sience and intermittency of solar energy resources,

1 including batteries, supercapacitors, and thermal  
2 storage.

3 (10) Microgrids using solar technology.

4 (11) Solar technologies enabling safe grid oper-  
5 ating conditions, such as fast-disconnect during an  
6 emergency.

7 (12) Distributed solar energy technologies, such  
8 as rooftop solar panels.

9 (13) Technologies and designs that enable a  
10 broad range of scales for solar power production.

11 (14) Advanced solar manufacturing technologies  
12 and best practices, including—

13 (A) materials and processes;

14 (B) development of industry standards;

15 (C) design and integration practices; and

16 (D) optimized packaging methods and new  
17 device designs.

18 (15) Advanced analytic and computing capabili-  
19 ties for better modeling and simulations of solar en-  
20 ergy systems.

21 (16) Electrical grid integration, including—

22 (A) integration of solar technologies into  
23 smart grid, transmission, and distribution;

24 (B) coordination of solar with other dis-  
25 tributed and large-scale energy resources;

- 1 (C) electrical power smoothing;
- 2 (D) microgrid integration;
- 3 (E) community solar;
- 4 (F) solar resource forecasting;
- 5 (G) regional and national electric system
- 6 balancing and long distance transmission op-
- 7 tions, including direct current and super-
- 8 conducting transmission and long-term storage
- 9 options;
- 10 (H) ways to address system operations
- 11 over minutes, hours, days, weeks, and seasons
- 12 with respect to the full range of project scales;
- 13 and
- 14 (I) electric grid security, including cyber
- 15 and physical security.
- 16 (17) Non-hardware and information-based ad-
- 17 vances in solar energy system siting, design, installa-
- 18 tion, operation, maintenance, and decommissioning.
- 19 (18) Solar energy technology as a part of strat-
- 20 egies commonly referred to as “behind-the-meter
- 21 strategies”, including with respect to electricity gen-
- 22 eration, load, energy efficiency, controls, storage,
- 23 and electric vehicles.

1           (19) Methods to reduce the total volume of  
2       water used in the manufacture, construction, oper-  
3       ation, and maintenance of solar energy technologies.

4           (20) Next generation demonstration facilities.

5           (21) Siting of solar energy on previously dis-  
6       turbed lands, including landfills, former mines, and  
7       other areas requiring environmental management.

8           (22) Other subject areas determined by the Sec-  
9       retary.

10       (d) TECHNICAL ASSISTANCE AND WORKFORCE DE-  
11       VELOPMENT.—In carrying out the program established  
12       under subsection (a), the Secretary shall also conduct, for  
13       purposes of supporting technical, non-hardware, and infor-  
14       mation-based advances in solar energy systems develop-  
15       ment and operations, including activities expanding access  
16       to solar energy for low-income and disadvantaged individ-  
17       uals and communities—

18           (1) technical assistance and analysis activities  
19       with eligible entities; and

20           (2) workforce development and training activi-  
21       ties, including—

22           (A) activities that support the dissemina-  
23       tion of standards and best practices for ena-  
24       bling solar power production; and

1 (B) through the use of proven techniques  
2 to expand the number of individuals from  
3 underrepresented groups pursuing and attain-  
4 ing skills relevant to solar energy.

5 (e) PROGRAM TARGETS.—The program established  
6 under subsection (a) shall address near-term (up to 2  
7 years), mid-term (up to 7 years), and long-term (up to  
8 15 years) challenges to the advancement of solar energy  
9 systems.

10 (f) SUSTAINABLE CHEMISTRY.—Each entity receiv-  
11 ing a grant, contract, or cooperative agreement under this  
12 section shall endeavor, in carrying out activities under  
13 such grant, contract, or cooperative agreement, to incor-  
14 porate, where appropriate, sustainable and green chem-  
15 istry and engineering principles, practices, and methodolo-  
16 gies.

17 (g) WILDLIFE IMPACT MITIGATION.—In carrying out  
18 the program established under subsection (a), the Sec-  
19 retary shall support wildlife impact mitigation technologies  
20 and strategies, including the use of distributed solar tech-  
21 nologies, to avoid, minimize, and offset the potential nega-  
22 tive impacts of solar energy systems on wildlife, including  
23 bird species, habitat, and local flora and fauna.

24 (h) STEWARDSHIP OF NATIONAL LABORATORY RE-  
25 SOURCES.—In awarding grants and entering into con-

1 tracts and cooperative agreements under this part, the  
2 Secretary shall steward relevant capabilities and programs  
3 of the National Laboratories.

4 (i) CONFORMING REPEALS.—The following provi-  
5 sions of law are hereby repealed:

6 (1) The Solar Energy Research, Development,  
7 and Demonstration Act of 1974 (42 U.S.C. 5551 et  
8 seq.), except for section 10.

9 (2) The Solar Photovoltaic Energy Research,  
10 Development, and Demonstration Act of 1978 (42  
11 U.S.C. 5581 et seq.).

12 (3) Paragraphs (2) and (3) of section 4(a) of  
13 the Renewable Energy and Energy Efficiency Tech-  
14 nology Competitiveness Act of 1989 (42 U.S.C.  
15 12003(a)).

16 (4) Subparagraph (A) of section 931(a)(2) of  
17 the Energy Policy Act of 2005 (42 U.S.C.  
18 16231(a)(2)).

19 (5) Sections 606 and 607 of the Energy Inde-  
20 pendence and Security Act of 2007 (42 U.S.C.  
21 17174 and 17175).

22 **SEC. 2503. SOLAR ENERGY DEMONSTRATION PROJECTS.**

23 (a) IN GENERAL.—In carrying out the program es-  
24 tablished under section 2502(a), the Secretary shall award  
25 grants on a competitive, merit-reviewed basis to eligible

1 entities for demonstration projects to advance the develop-  
2 ment of solar energy technologies and systems production.

3 (b) PRIORITY.—In awarding grants under subsection  
4 (a), the Secretary shall give priority to projects that—

5 (1) are located in geographically diverse regions  
6 of the United States;

7 (2) can be replicated in a variety of regions and  
8 climates;

9 (3) demonstrate technologies that address  
10 intermittency, variability, storage challenges, behind-  
11 the-meter operations, and independent operational  
12 capability;

13 (4) coordinate solar technologies with other dis-  
14 tributed and large-scale energy resources;

15 (5) facilitate identification of optimum ap-  
16 proaches among competing solar energy tech-  
17 nologies;

18 (6) include business commercialization plans  
19 that have the potential for production of solar en-  
20 ergy equipment at high volumes;

21 (7) support the development of advanced manu-  
22 facturing technologies that have the potential to im-  
23 prove United States competitiveness in the inter-  
24 national solar energy manufacturing sector;



1           (8) provide the greatest potential to reduce en-  
2       ergy costs, as well as promote accessibility and com-  
3       munity implementation of demonstrated tech-  
4       nologies, for consumers;

5           (9) increase disclosure and transparency of in-  
6       formation to all market participants to help in mak-  
7       ing optimal decisions;

8           (10) promote overall electric infrastructure reli-  
9       ability, security, and resilience should grid functions  
10      be disrupted or damaged;

11          (11) promote solar energy in low-income com-  
12      munities and those disproportionately burdened by  
13      environmental pollution; and

14          (12) satisfy any other criteria that the Sec-  
15      retary determines appropriate.

16      (c) USE OF FUNDS.—Grants under this section may  
17      be used, to the extent that funding is not otherwise avail-  
18      able through other Federal programs or power purchase  
19      agreements, for—

20          (1) any necessary site engineering study;

21          (2) an economic assessment of site-specific con-  
22      ditions;

23          (3) appropriate feasibility studies to determine  
24      whether the demonstration can be replicated;

1 (4) installation of equipment, service, and sup-  
2 port;

3 (5) operation for at least the minimum amount  
4 of time required to fully assess the project's results  
5 and objectives, as determined by a peer-reviewed  
6 process; and

7 (6) validation of technical, economic, and envi-  
8 ronmental assumptions and documentation of les-  
9 sons learned.

10 (d) SOLICITATION.—Not later than 90 days after the  
11 date of enactment of this Act and biennially thereafter,  
12 the Secretary shall conduct a national solicitation for ap-  
13 plications for grants under this section.

14 **SEC. 2504. NEXT GENERATION SOLAR ENERGY MANUFAC-**  
15 **TURING INITIATIVE.**

16 (a) IN GENERAL.—In carrying out the program es-  
17 tablished under section 2502(a), the Secretary shall con-  
18 duct research, development, demonstration, and commer-  
19 cial application projects, in accordance with section  
20 2502(b), to advance new solar energy manufacturing tech-  
21 nologies and techniques, including those that manufacture  
22 solar cells, hardware, and enabling devices.

23 (b) STRATEGIC VISION REPORT.—

24 (1) IN GENERAL.—Not later than September 1,  
25 2021, the Secretary shall submit to the Committee

1 on Science, Space, and Technology of the House of  
2 Representatives, the Committee on Energy and Nat-  
3 ural Resources of the Senate, and any other commit-  
4 tees of Congress deemed appropriate by the Sec-  
5 retary a report on the results of a study that exam-  
6 ines the viable market opportunities available for  
7 solar energy technology manufacturing in the United  
8 States, including solar cells, hardware, and enabling  
9 technologies.

10 (2) REPORT REQUIREMENTS.—The report  
11 under paragraph (1) shall include—

12 (A) a description of—

13 (i) the ability to competitively manu-  
14 facture solar technology in the United  
15 States, including the manufacture of—

16 (I) new and advanced materials,  
17 such as cells made with new, cost-ef-  
18 fective, high efficiency materials;

19 (II) solar module equipment and  
20 enabling technologies, including smart  
21 inverters, sensors, and tracking equip-  
22 ment;

23 (III) innovative solar module de-  
24 signs and applications, including those  
25 that can directly integrate with new

1 and existing buildings and other infra-  
2 structure; and

3 (IV) other research areas as de-  
4 termined by the Secretary; and

5 (ii) opportunities and barriers within  
6 the United States and international solar  
7 energy technology supply chains;

8 (B) policy recommendations for enhancing  
9 solar energy technology manufacturing in the  
10 United States; and

11 (C) an aggressive 10-year target and plan,  
12 beginning in 2022, to enhance the competitive-  
13 ness of solar energy technology manufacturing  
14 in the United States.

15 (c) PROGRAM IMPLEMENTATION.—In carrying out  
16 the research, development, demonstration, and commercial  
17 application program under this section, to the extent prac-  
18 ticable, the Secretary shall follow the recommendations in-  
19 cluded in the report under subsection (b) and award  
20 grants and enter into contracts and cooperative agree-  
21 ments for solar energy manufacturing projects that—

22 (1) reduce capital expenditures or provide  
23 lower-cost manufacturing options;

24 (2) eliminate manufacturing process steps;

25 (3) reduce energy, water, and material inputs;

1 (4) establish alternative supply chains for mate-  
2 rials and components; and

3 (5) take advantage of rapid prototyping, small  
4 batch manufacturing, and roll-to-roll processing.

5 (d) PROGRAM EVALUATION.—Beginning not later  
6 than 3 years after the completion of the report under sub-  
7 section (b), and every 4 years thereafter, the Secretary  
8 shall provide, and make available to the public and the  
9 relevant authorizing and appropriations committees of  
10 Congress, an independent review of the program author-  
11 ized under this section to evaluate its progress toward  
12 meeting the policy recommendations and targets deter-  
13 mined in the report.

14 **SEC. 2505. PHOTOVOLTAIC DEVICE RECYCLING RESEARCH**  
15 **AND DEVELOPMENT.**

16 (a) IN GENERAL.—In carrying out the program, the  
17 Secretary shall conduct research, development, demonstra-  
18 tion, and commercial application projects, in accordance  
19 with section 2502(b), to create innovative and practical  
20 approaches to increase reuse and recycling of photovoltaic  
21 devices.

22 (b) PURPOSE.—The Secretary shall award grants  
23 and enter into contracts and cooperative agreements under  
24 subsection (a) for projects that address—

1           (1) technology to increase the efficiency of pho-  
2           tovoltaic device recycling and maximize the recovery  
3           of valuable raw materials for use in new products  
4           while minimizing the life-cycle environmental im-  
5           pacts such as greenhouse gas emissions and water  
6           usage;

7           (2) expanded uses for materials from recycled  
8           photovoltaic devices;

9           (3) development and demonstration of environ-  
10          mentally responsible alternatives to the use of haz-  
11          ardous materials in photovoltaic devices and the pro-  
12          duction of such devices;

13          (4) development of methods to separate and re-  
14          move hazardous materials from photovoltaic devices  
15          and to recycle or dispose of those materials in a safe  
16          manner;

17          (5) product design and construction to facilitate  
18          disassembly and recycling of photovoltaic devices;

19          (6) tools and methods to aid in assessing the  
20          environmental impacts of the production of photo-  
21          voltaic devices and photovoltaic device recycling and  
22          disposal;

23          (7) product design and construction and other  
24          tools and techniques to extend the life cycle of pho-

1        photovoltaic devices, including methods to promote their  
2        safe reuse;

3            (8) strategies to increase consumer acceptance  
4        and practice of recycling of photovoltaic devices; and  
5            (9) processes to reduce the costs and environ-  
6        mental impact of disposal of toxic materials used in  
7        photovoltaic devices.

8        (c) APPLICATIONS.—An eligible entity seeking a  
9        grant, contract, or cooperative agreement under this sec-  
10       tion shall submit to the Secretary an application that in-  
11       cludes a description of—

12            (1) the project that will be undertaken and the  
13        contributions of each participating entity; and

14            (2) the applicability of the project to increasing  
15        reuse and recycling of photovoltaic devices with the  
16        least environmental impacts as measured by life-  
17        cycle analyses, and the potential for incorporating  
18        the research results into industry practice.

19        (d) DISSEMINATION OF RESULTS.—The Secretary  
20       shall publish the results of projects supported under this  
21       section through—

22            (1) development of best practices or training  
23        materials for use in the photovoltaics manufacturing,  
24        design, installation, refurbishing, or recycling indus-  
25       tries;

1 (2) dissemination at industry conferences;

2 (3) coordination with information dissemination  
3 programs relating to recycling of electronic devices  
4 in general;

5 (4) demonstration projects; and

6 (5) educational materials for the public pro-  
7 duced in conjunction with State, Tribal, and local  
8 governments or nonprofit organizations on the prob-  
9 lems and solutions related to reuse and recycling of  
10 photovoltaic devices.

11 (e) PHOTOVOLTAIC MATERIALS PHYSICAL PROP-  
12 erty Database.—

13 (1) IN GENERAL.—Not later than September 1,  
14 2022, the Secretary shall establish a comprehensive  
15 physical property database of materials for use in  
16 photovoltaic devices. Such database shall include—

17 (A) identification of materials used in pho-  
18 tovoltaic devices;

19 (B) a list of commercially available  
20 amounts of these materials and their country of  
21 origin;

22 (C) amounts of these materials projected  
23 to be available through mining or recycling of  
24 photovoltaic and other electronic devices; and



1 (D) a list of other significant uses for each  
2 of these materials.

3 (2) PRIORITIES.—Not later than September 1,  
4 2021, the Secretary, working with private industry,  
5 shall develop a plan to establish priorities and re-  
6 quirements for the database under this subsection,  
7 including the protection of proprietary information,  
8 trade secrets, and other confidential business infor-  
9 mation.

10 (3) COORDINATION.—The Secretary shall co-  
11 ordinate with the Director of the National Institute  
12 of Standards and Technology, the Administrator of  
13 the Environmental Protection Agency, and the Ad-  
14 ministrator of the Department of Interior to facili-  
15 tate the incorporation of the database under this  
16 subsection with any existing database for materials  
17 involved in electronic manufacturing and recycling.

18 **SEC. 2506. AUTHORIZATION OF APPROPRIATIONS.**

19 There are authorized to be appropriated to the Sec-  
20 retary to carry out this part—

- 21 (1) \$294,000,000 for fiscal year 2021;
- 22 (2) \$308,700,000 for fiscal year 2022;
- 23 (3) \$324,135,000 for fiscal year 2023;
- 24 (4) \$340,341,750 for fiscal year 2024; and
- 25 (5) \$357,358,838 for fiscal year 2025.

1           **PART 2—WIND ENERGY RESEARCH AND**  
2                           **DEVELOPMENT**

3   **SEC. 2521. DEFINITIONS.**

4           In this section:

5                   (1) The term “eligible entity” means any of the  
6           following entities:

7                           (A) An institution of higher education.

8                           (B) A National Laboratory.

9                           (C) A Federal research agency.

10                          (D) A State research agency.

11                          (E) A nonprofit research organization.

12                          (F) An industrial entity or a multi-institu-  
13           tional consortium thereof.

14                   (2) The term “institution of higher education”  
15           has the meaning given such term in section 101 of  
16           the Higher Education Act of 1965 (20 U.S.C.  
17           1001).

18                   (3) The term “National Laboratory” has the  
19           meaning given such term in section 2(3) of the En-  
20           ergy Policy Act of 2005 (42 U.S.C. 15801(3)).

21                   (4) The term “supersized turbine” means a 12  
22           megawatt or greater wind turbine, typically with a  
23           tower height greater than 140 meters and blades  
24           greater than 75 meters.

1 **SEC. 2522. WIND ENERGY RESEARCH AND DEVELOPMENT.**

2 (a) IN GENERAL.—The Secretary of Energy (in this  
3 part, referred to as the “Secretary”) shall carry out a pro-  
4 gram to conduct research, development, demonstration,  
5 and commercial application of wind energy technologies.  
6 In carrying out such program and in accordance with sub-  
7 section (b), the Secretary shall award grants and enter  
8 into contracts and cooperative agreements under this sec-  
9 tion and sections 2523, 2524, and 2525 for each of the  
10 following purposes:

11 (1) To improve the energy efficiency, reliability,  
12 resilience, security, and capacity of wind energy gen-  
13 eration.

14 (2) To optimize the design and control of wind  
15 energy systems for the broadest practical range of  
16 geographic and atmospheric conditions.

17 (3) To reduce the cost and risk of siting, per-  
18 mitting, construction, operation, maintenance, and  
19 decommissioning of wind energy systems, including  
20 strategies and technologies to reduce environmental  
21 and community impacts, improve grid integration,  
22 and reduce regulatory barriers.

23 (4) To improve materials, engineering, and  
24 manufacturing processes for turbines, including  
25 supersized turbines.

1           (5) To optimize wind plant performance and in-  
2           tegration within hybrid energy systems to enhance  
3           cost efficiency and electric grid stability and resil-  
4           ience.

5           (b) GRANTS, CONTRACTS, AND COOPERATIVE  
6 AGREEMENTS.—

7           (1) GRANTS.—In carrying out the program, the  
8           Secretary shall award grants on a competitive,  
9           merit-reviewed basis to eligible entities for projects  
10          that the Secretary determines would best achieve the  
11          goals of the program.

12          (2) CONTRACTS AND COOPERATIVE AGREE-  
13          MENTS.—In carrying out the program, the Secretary  
14          may enter into contracts and cooperative agreements  
15          with eligible entities and Federal agencies for  
16          projects that the Secretary determines would further  
17          the purposes of the program.

18          (3) APPLICATION.—An entity seeking funding  
19          or a contract or agreement under this subsection  
20          shall submit to the Secretary an application at such  
21          time, in such manner, and containing such informa-  
22          tion as the Secretary may require.

23          (c) WIND ENERGY RESEARCH SUBJECT AREAS.—  
24          The program established under subsection (a) shall focus

1 on the research, development, demonstration, and com-  
2 mercial application of each of the following subject areas:

3 (1) Wind power plant siting, performance, and  
4 operations including—

5 (A) wind flows and turbine-to-turbine  
6 interactions;

7 (B) energy conversion potential;

8 (C) turbine and wind plant control para-  
9 digms;

10 (D) turbine and wind plant security;

11 (E) turbine components;

12 (F) integrated hybrid plant systems;

13 (G) wind energy siting and its effects on  
14 wildlife and habitat; and

15 (H) siting of wind energy on previously  
16 disturbed lands, including landfills, former  
17 mines, and other areas requiring environmental  
18 management.

19 (2) New materials and designs related to  
20 blades, rotors, towers and drivetrains including—

21 (A) higher tip speed rotor designs;

22 (B) low noise rotor designs;

23 (C) advanced drivetrain and generator con-  
24 cepts;

1 (D) modular construction and onsite or  
2 near-site manufacturing and assembly tech-  
3 niques;

4 (E) sustainable and recyclable materials  
5 and manufacturing systems;

6 (F) supersized turbine design and installa-  
7 tion approaches; and

8 (G) lightweight materials.

9 (3) Offshore wind-specific projects including—

10 (A) fixed and floating substructure con-  
11 cepts, including technologies and strategies to  
12 minimize potential acoustic disturbances to ma-  
13 rine species;

14 (B) projects to assess and mitigate the im-  
15 pacts of hurricane wind flow, freshwater ice,  
16 and other United States-specific conditions;

17 (C) innovative operations and maintenance  
18 strategies;

19 (D) analysis of offshore meteorological, ge-  
20 ological, biological, and oceanographic data col-  
21 lection;

22 (E) offshore infrastructure monitoring;  
23 and

1 (F) analysis of corrosion and fatigue for  
2 the purpose of extending the design life of off-  
3 shore wind turbine substructures.

4 (4) Recycling and reuse of wind energy compo-  
5 nents.

6 (5) Wind power forecasting and atmospheric  
7 measurement systems, including for turbines and  
8 plant systems of varying height.

9 (6) Distributed wind-specific projects, includ-  
10 ing—

11 (A) cost-effective turbine designs, compo-  
12 nents, and manufacturing; and

13 (B) microgrid applications.

14 (7) Advanced transportation mechanisms for  
15 wind turbine components.

16 (8) Transformational technologies for har-  
17 nassing wind energy, including airborne wind energy  
18 concepts.

19 (9) Methods to extend the operational lifetime  
20 of onshore and offshore wind turbines and systems.

21 (10) Storage technologies to address the tran-  
22 sience and intermittency of wind energy resources.

23 (11) Other research areas as determined by the  
24 Secretary.

25 (d) REPORT.—

1           (1) IN GENERAL.—Not later than 180 days  
2       after the date of the enactment of this Act, the Sec-  
3       retary shall submit to the Committee on Science,  
4       Space, and Technology of the House of Representa-  
5       tives and the Committee on Energy and Natural Re-  
6       sources of the Senate a report on the potential for,  
7       and technical viability of, airborne wind energy sys-  
8       tems to provide a significant source of energy in the  
9       United States.

10          (2) CONTENTS.—The report under paragraph  
11       (1) shall include a summary of research, develop-  
12       ment, demonstration, and commercial application  
13       needs, including an estimate of Federal funding re-  
14       quirements, to further examine and validate the  
15       technical and economic viability of airborne wind en-  
16       ergy concepts over the 10-year period beginning on  
17       the date of the enactment of this Act.

18       (e) COORDINATION.—To the maximum extent prac-  
19       ticable, the Secretary shall coordinate activities under the  
20       program established under subsection (a) with other rel-  
21       evant programs and capabilities of the Department of En-  
22       ergy and other Federal research programs.

23       (f) CONFORMING REPEALS.—



1           (1) Section 931(a)(2) of the Energy Policy Act  
2           of 2005 (42 U.S.C. 16231(a)(2)) is amended by  
3           striking subparagraph (B).

4           (2) Section 4(a) of the Renewable Energy and  
5           Energy Efficiency Technology Competitiveness Act  
6           of 1989 (42 U.S.C. 12003(a)) is amended by strik-  
7           ing paragraph (1).

8   **SEC. 2523. WIND ENERGY TECHNOLOGY VALIDATION AND**  
9                           **MARKET TRANSFORMATION PROGRAM.**

10          (a) IN GENERAL.—In carrying out the program es-  
11          tablished under section 2522(a), the Secretary shall con-  
12          duct a wind energy technology demonstration, validation,  
13          and market transformation program under which the Sec-  
14          retary shall award grants on a competitive, merit-reviewed  
15          basis to eligible entities to support activities that dem-  
16          onstrate and validate new wind energy technologies with  
17          the potential to be cost-competitive for land-based, off-  
18          shore, and distributed applications.

19          (b) APPLICATION.—An eligible entity seeking a grant  
20          under this section shall submit an application in such form  
21          and manner as the Secretary may prescribe and that con-  
22          tains—

23                 (1) a certification that any demonstration  
24          project carried out using grant funds are—

1 (A) conducted in collaboration with indus-  
2 try and, as appropriate, with institutions of  
3 higher education and other Federal research  
4 programs; and

5 (B) of sufficient size and geographic diver-  
6 sity to measure wind energy system perform-  
7 ance under the full productive range of wind  
8 conditions in the United States; and

9 (2) such other information as the Secretary  
10 may require.

11 (c) FACILITY FOR HYBRID ENERGY SYSTEM RE-  
12 SEARCH AND DEMONSTRATION PROJECTS.—In carrying  
13 out the program established under subsection (a), the Sec-  
14 retary shall support a facility to conduct research, develop-  
15 ment, and demonstration projects for wind turbines and  
16 plants in hybrid energy systems that incorporate diverse  
17 generation sources, loads, and storage technologies.

18 (d) OFFSHORE RESEARCH FACILITY.—In carrying  
19 out the program established under subsection (a), the Sec-  
20 retary shall establish a facility to conduct research, devel-  
21 opment, demonstration, and commercial application  
22 projects for ocean and atmospheric resource characteriza-  
23 tion relevant to offshore wind energy development in co-  
24 ordination with the ocean and atmospheric science com-  
25 munities. The facility shall be an offshore area used to

1 evaluate, test, and advance atmospheric, oceanic, biologic,  
2 and geologic monitoring technologies that improve off-  
3 shore wind energy development, including the generation  
4 of benchmark data sets for testing offshore wind energy  
5 technologies and informing how such technologies can be  
6 financed, insured, and regulated.

7 (e) OFFSHORE SUPPORT STRUCTURE TESTING FA-  
8 CILITY.—In carrying out the program established under  
9 subsection (a), the Secretary shall create a facility to con-  
10 duct research, development, demonstration, and commer-  
11 cial application projects for large-scale and full-scale off-  
12 shore wind energy support structure components and sys-  
13 tems.

14 **SEC. 2524. WIND ENERGY INCUBATOR FUNDING.**

15 In carrying out the program established under section  
16 2522(a), the Secretary shall support, in accordance with  
17 section 2522(b), incubators advancing innovative tech-  
18 nologies that are not represented in a significant way in—

19 (1) the portfolio of wind energy research activi-  
20 ties carried out by the Department of Energy as of  
21 the date of the enactment of this Act; or

22 (2) technology roadmaps used by the Depart-  
23 ment of Energy as of such date of enactment.

1 **SEC. 2525. MITIGATING REGULATORY AND MARKET BAR-**  
2 **RIERS.**

3 (a) IN GENERAL.—In carrying out the program es-  
4 tablished under section 2522(a), the Secretary shall re-  
5 search, develop, test, and evaluate, in accordance with sec-  
6 tion 2522(b), ways to reduce regulatory and market bar-  
7 riers to the widespread adoption of wind power, includ-  
8 ing—

9 (1) grid transmission and integration chal-  
10 lenges; and

11 (2) siting and permitting issues associated with  
12 the potential impacts of wind power systems on wild-  
13 life, radar systems, local communities, military oper-  
14 ations, and airspace.

15 (b) WILDLIFE IMPACT MITIGATION.—In carrying out  
16 the activities described in subsection (a), the Secretary  
17 shall support the research, development, demonstration,  
18 and commercial application of wildlife impact mitigation  
19 technologies or strategies to avoid, minimize, and offset  
20 the potential impacts of wind energy facilities on—

21 (1) bald and golden eagles;

22 (2) bat species;

23 (3) marine wildlife; and

24 (4) other sensitive species and habitats.

25 (c) EDUCATION AND OUTREACH.—In carrying out  
26 the activities described in subsection (a), the Secretary

1 shall support education and outreach activities, with a  
2 focus on low-income and disadvantaged communities, to  
3 disseminate information and promote public under-  
4 standing of wind technologies and the wind energy work-  
5 force, including through the Collegiate Wind Competition.

6 (d) TECHNICAL ASSISTANCE AND WORKFORCE DE-  
7 VELOPMENT.—In carrying out the program established  
8 under section 2522(a), the Secretary shall also conduct,  
9 for purposes of supporting technical, non-hardware, and  
10 information based advances in wind energy systems’ devel-  
11 opment and operation, including activities expanding ac-  
12 cess to wind energy for low-income individuals and dis-  
13 advantaged individuals and communities—

14 (1) technical assistance and analysis activities  
15 with eligible entities; and

16 (2) workforce development and training activi-  
17 ties, including—

18 (A) activities that support the dissemina-  
19 tion of standards and best practices for ena-  
20 bling wind power production; and

21 (B) through the use of proven techniques  
22 to expand the number of individuals from  
23 underrepresented groups pursuing and attain-  
24 ing skills relevant to wind energy.

1 **SEC. 2526. AUTHORIZATION OF APPROPRIATIONS.**

2 There are authorized to be appropriated to the Sec-  
3 retary to carry out this part—

4 (1) \$109,200,000 for fiscal year 2021;

5 (2) \$114,660,000 for fiscal year 2022;

6 (3) \$120,393,000 for fiscal year 2023;

7 (4) \$126,412,650 for fiscal year 2024; and

8 (5) \$132,733,282 for fiscal year 2025.

9 **PART 3—ADVANCED GEOTHERMAL RESEARCH**

10 **AND DEVELOPMENT**

11 **SEC. 2541. DEFINITIONS.**

12 Section 612 of the Energy Independence and Security  
13 Act of 2007 (42 U.S.C. 17191) is amended—

14 (1) by amending paragraph (1) to read as fol-  
15 lows:

16 “(1) ENGINEERED.—When referring to en-  
17 hanced geothermal systems, the term ‘engineered’  
18 means designed to access subsurface heat, including  
19 stimulation and nonstimulation technologies to ad-  
20 dress one or more of the following issues:

21 “(A) Lack of effective permeability, poros-  
22 ity or open fracture connectivity within the heat  
23 reservoir.

24 “(B) Insufficient contained geofluid in the  
25 heat reservoir.

1 “(C) A low average geothermal gradient  
2 which necessitates deeper drilling, or the use of  
3 alternative heat sources or heat generation  
4 processes.”;

5 (2) by redesignating paragraphs (2) through  
6 (7) as paragraphs (3) through (8), respectively;

7 (3) by adding after paragraph (1) the following:

8 “(2) ELIGIBLE ENTITY.—The term ‘eligible en-  
9 tity’ means any of the following entities:

10 “(A) An institution of higher education.

11 “(B) A National laboratory.

12 “(C) A Federal research agency.

13 “(D) A State research agency.

14 “(E) A nonprofit research organization.

15 “(F) An industrial entity.

16 “(G) A consortium of 2 or more entities  
17 described in subparagraphs (A) through (F).”;

18 and

19 (4) by adding at the end the following:

20 “(9) INSTITUTION OF HIGHER EDUCATION.—

21 The term ‘institution of higher education’ has the  
22 meaning given such term in section 101 of the High-  
23 er Education Act of 1965 (20 U.S.C 1001).”.

1 **SEC. 2542. HYDROTHERMAL RESEARCH AND DEVELOP-**  
2 **MENT.**

3 Section 613 of the Energy Independence and Security  
4 Act of 2007 (42 U.S.C. 17192) is amended to read as  
5 follows:

6 **“SEC. 613. HYDROTHERMAL RESEARCH AND DEVELOP-**  
7 **MENT.**

8 “(a) IN GENERAL.—The Secretary shall carry out a  
9 program of research, development, demonstration, and  
10 commercial application for geothermal energy production  
11 from hydrothermal systems.

12 “(b) PROGRAMS.—The program authorized in sub-  
13 section (a) shall include the following:

14 “(1) ADVANCED HYDROTHERMAL RESOURCE  
15 TOOLS.—The research and development of advanced  
16 geologic tools to assist in locating hydrothermal re-  
17 sources, and to increase the reliability of site charac-  
18 terization, including the development of new imaging  
19 and sensing technologies and techniques to assist in  
20 prioritization of targets for characterization;

21 “(2) EXPLORATORY DRILLING FOR GEO-  
22 THERMAL RESOURCES.—The demonstration of ad-  
23 vanced technologies and techniques of siting and ex-  
24 ploratory drilling for undiscovered resources in a va-  
25 riety of geologic settings, carried out in collaboration  
26 with industry partners that will assist in the acquisi-



1       tion of high quality data sets relevant for hydro-  
2       thermal subsurface characterization activities.”.

3   **SEC. 2543. GENERAL GEOTHERMAL SYSTEMS RESEARCH**  
4       **AND DEVELOPMENT.**

5       Section 614 of the Energy Independence and Security  
6   Act of 2007 (42 U.S.C. 17193) is amended to read as  
7   follows:

8   **“SEC. 614. GENERAL GEOTHERMAL SYSTEMS RESEARCH**  
9       **AND DEVELOPMENT.**

10       “(a) SUBSURFACE COMPONENTS AND SYSTEMS.—  
11   The Secretary shall support a program of research, devel-  
12   opment, demonstration, and commercial application of  
13   components and systems capable of withstanding geo-  
14   thermal environments and necessary to develop, produce,  
15   and monitor geothermal reservoirs and produce geo-  
16   thermal energy.

17       “(b) ENVIRONMENTAL IMPACTS.—The Secretary  
18   shall—

19               “(1) support a program of research, develop-  
20       ment, demonstration, and commercial application of  
21       technologies and practices designed to mitigate or  
22       preclude potential adverse environmental impacts of  
23       geothermal energy development, production or use;  
24       and

1           “(2) support a research program to identify po-  
2           tential environmental impacts, including induced  
3           seismicity, and environmental benefits of geothermal  
4           energy development, production, and use, and ensure  
5           that the program described in paragraph (1) ad-  
6           dresses such impacts, including water use and ef-  
7           fects on groundwater and local hydrology;

8           “(3) support a program of research to compare  
9           the potential environmental impacts and environ-  
10          mental benefits identified as part of the develop-  
11          ment, production, and use of geothermal energy with  
12          the potential emission reductions of greenhouse  
13          gases gained by geothermal energy development,  
14          production, and use; and

15          “(4) in carrying out this section, the Secretary  
16          shall, to the maximum extent practicable, consult  
17          with relevant federal agencies, including the Envi-  
18          ronmental Protection Agency.

19          “(c) RESERVOIR THERMAL ENERGY STORAGE.—The  
20          Secretary shall support a program of research, develop-  
21          ment, and demonstration of reservoir thermal energy stor-  
22          age, emphasizing cost-effective improvements through  
23          deep direct use engineering, design, and systems research.

24          “(d) OIL AND GAS TECHNOLOGY TRANSFER INITIA-  
25          TIVE.—

1           “(1) IN GENERAL.—The Secretary shall sup-  
2           port an initiative among the Office of Fossil Energy,  
3           the Office of Energy Efficiency and Renewable En-  
4           ergy, and the private sector to research, develop, and  
5           demonstrate relevant advanced technologies and op-  
6           eration techniques used in the oil and gas sector for  
7           use in geothermal energy development.

8           “(2) PRIORITIES.—In carrying out paragraph  
9           (1), the Secretary shall prioritize technologies with  
10          the greatest potential to significantly increase the  
11          use and lower the cost of geothermal energy in the  
12          United States, including the cost and speed of geo-  
13          thermal drilling surface technologies, and well con-  
14          struction.

15          “(e) COPRODUCTION OF GEOTHERMAL ENERGY AND  
16          MINERALS PRODUCTION RESEARCH AND DEVELOPMENT  
17          INITIATIVE.—

18                 “(1) IN GENERAL.—The Secretary shall carry  
19                 out a research and development initiative under  
20                 which the Secretary shall award grants to dem-  
21                 onstrate the coproduction of critical minerals from  
22                 geothermal resources.

23                 “(2) REQUIREMENTS.—An award made under  
24                 paragraph (1) shall—

1           “(A) improve the cost effectiveness of re-  
2           moving minerals from geothermal brines as part  
3           of the coproduction process;

4           “(B) increase recovery rates of the tar-  
5           geted mineral commodity;

6           “(C) decrease water use and other environ-  
7           mental impacts, as determined by the Sec-  
8           retary; and

9           “(D) demonstrate a path to commercial vi-  
10          ability.

11       “(f) FLEXIBLE OPERATIONS.—The Secretary shall  
12       support a research initiative on flexible operation of geo-  
13       thermal power plants.

14       “(g) HYBRID ENERGY SYSTEMS.—The Secretary  
15       shall identify opportunities for joint research, develop-  
16       ment, and demonstration programs between geothermal  
17       systems and other energy generation or storage systems.”.

18       **SEC. 2544. ENHANCED GEOTHERMAL SYSTEMS RESEARCH**  
19                               **AND DEVELOPMENT.**

20       Section 615 of the Energy Independence and Security  
21       Act of 2007 (42 U.S.C. 17194) is amended to read as  
22       follows:

1   **“SEC. 615. ENHANCED GEOTHERMAL SYSTEMS RESEARCH**  
2                   **AND DEVELOPMENT.**

3           “(a) IN GENERAL.—The Secretary shall support a  
4 program of research, development, demonstration, and  
5 commercial application for enhanced geothermal systems,  
6 including the programs described in subsection (b).

7           “(b) ENHANCED GEOTHERMAL SYSTEMS TECH-  
8 NOLOGIES.—In collaboration with industry partners, insti-  
9 tutions of higher education, and the national laboratories,  
10 the Secretary shall support a program of research, devel-  
11 opment, demonstration, and commercial application of the  
12 technologies to achieve higher efficiency and lower cost en-  
13 hanced geothermal systems, including—

14                   “(1) reservoir stimulation;

15                   “(2) drilled, non-stimulated (e.g. closed-loop)  
16 reservoir technologies;

17                   “(3) reservoir characterization, monitoring, and  
18 modeling and understanding of the surface area and  
19 volume of fractures;

20                   “(4) stress and fracture mapping including real  
21 time monitoring and modeling;

22                   “(5) tracer development;

23                   “(6) three and four-dimensional seismic imag-  
24 ing and tomography;

25                   “(7) well placement and orientation;

26                   “(8) long-term reservoir management;

1 “(9) drilling technologies, methods, and tools;  
2 “(10) improved exploration tools;  
3 “(11) zonal isolation; and  
4 “(12) understanding induced seismicity risks  
5 from reservoir engineering and stimulation.

6 “(c) FRONTIER OBSERVATORY FOR RESEARCH IN  
7 GEOTHERMAL ENERGY.—The Secretary shall support the  
8 establishment and construction of up to 3 field research  
9 sites, which shall each be known as a ‘Frontier Observ-  
10 atory for Research in Geothermal Energy’ or ‘FORGE’  
11 site to develop, test, and enhance techniques and tools for  
12 enhanced geothermal energy.

13 “(1) DUTIES.—The Secretary shall—

14 “(A) award grants in support of research  
15 and development projects focused on advanced  
16 monitoring technologies, new technologies and  
17 approaches for implementing multi-zone stimu-  
18 lations, nonstimulation techniques, and dynamic  
19 reservoir modeling that incorporates all avail-  
20 able high-fidelity characterization data; and

21 “(B) seek opportunities to coordinate ef-  
22 forts and share information with domestic and  
23 international partners engaged in research and  
24 development of geothermal systems and related

1           technology, including coordination between  
2           FORGE sites.

3           “(2) SITE SELECTION.—Of the FORGE sites  
4           referred to in paragraph (1), the Secretary shall—

5                   “(A) consider applications through a com-  
6                   petitive, merit-reviewed process, from National  
7                   Laboratories, multi-institutional collaborations,  
8                   institutes of higher education and other appro-  
9                   priate entities best suited to provide national  
10                  leadership on geothermal related issues and  
11                  perform the duties enumerated under this sub-  
12                  section; and

13                   “(B) prioritize existing field sites and fa-  
14                   cilities with capabilities relevant to the duties  
15                   enumerated under this subsection.

16           “(3) EXISTING FORGE SITES.—A FORGE site  
17           already in existence on the date of enactment of this  
18           Act may continue to receive support.

19           “(4) FUNDING.—Out of funds authorized to be  
20           appropriated under section 623, there shall be made  
21           available to the Secretary to carry out the FORGE  
22           activities under this paragraph—

23                   “(A) \$45,000,000 for fiscal year 2021;

24                   “(B) \$55,000,000 for fiscal year 2022;

25                   “(C) \$65,000,000 for fiscal year 2023;

1 “(D) \$70,000,000 for fiscal year 2024;

2 and

3 “(E) \$70,000,000 for fiscal year 2025.

4 In carrying out this section, the Secretary shall con-  
5 sider the balance between funds dedicated to con-  
6 struction and operations and research activities to  
7 reflect the state of site development.

8 “(d) ENHANCED GEOTHERMAL SYSTEMS DEM-  
9 ONSTRATIONS.—

10 “(1) IN GENERAL.—Beginning on the date of  
11 enactment of this section, the Secretary, in collabo-  
12 ration with industry partners, institutions of higher  
13 education, and the national laboratories, shall sup-  
14 port an initiative for demonstration of enhanced geo-  
15 thermal systems for power production or direct use.

16 “(2) PROJECTS.—

17 “(A) IN GENERAL.—Under the initiative  
18 described in paragraph (1), demonstration  
19 projects shall be carried out in locations that  
20 are commercially viable for enhanced geo-  
21 thermal systems development, while also consid-  
22 ering environmental impacts to the maximum  
23 extent practicable, as determined by the Sec-  
24 retary.



1                   “(B)     REQUIREMENTS.—Demonstration  
2                   projects under subparagraph (A) shall—

3                   “(i) collectively demonstrate—

4                   “(I) different geologic settings,  
5                   such as hot sedimentary aquifers, lay-  
6                   ered geologic systems, supercritical  
7                   systems, and basement rock systems;  
8                   and

9                   “(II) a variety of development  
10                  techniques, including open hole and  
11                  cased hole completions, differing well  
12                  orientations, and stimulation and non-  
13                  stimulation mechanisms; and

14                  “(ii) to the extent practicable, use ex-  
15                  isting sites where subsurface characteriza-  
16                  tion or geothermal energy integration anal-  
17                  ysis has been conducted.

18                  “(C)   EASTERN   DEMONSTRATION.—Not  
19                  fewer than 1 of the demonstration projects car-  
20                  ried out under subparagraph (A) shall be lo-  
21                  cated an area east of the Mississippi that is  
22                  suitable for enhanced geothermal demonstration  
23                  for power, heat, or a combination of power and  
24                  heat.”.

1 **SEC. 2545. GEOTHERMAL HEAT PUMPS AND DIRECT USE.**

2 (a) IN GENERAL.—Title VI of the Energy Independ-  
3 ence and Security Act of 2007 is amended by inserting  
4 after section 616 (42 U.S.C. 17195) the following:

5 **“SEC. 616A. GEOTHERMAL HEAT PUMPS AND DIRECT USE**  
6 **RESEARCH AND DEVELOPMENT.**

7 “(a) PURPOSES.—The purposes of this section are—

8 “(1) to improve the understanding of related  
9 earth sciences, components, processes, and systems  
10 used for geothermal heat pumps and the direct use  
11 of geothermal energy; and

12 “(2) to increase the energy efficiency, lower the  
13 cost, increase the use, and improve and demonstrate  
14 the effectiveness of geothermal heat pumps and the  
15 direct use of geothermal energy.

16 “(b) DEFINITIONS.—In this section:

17 “(1) DIRECT USE OF GEOTHERMAL ENERGY.—  
18 The term ‘direct use of geothermal energy’ means  
19 geothermal systems that use water directly or  
20 through a heat exchanger to provide—

21 “(A) heating and cooling to buildings, com-  
22 mercial districts, residential communities, and  
23 large municipal, or industrial projects; or

24 “(B) heat required for industrial processes,  
25 agriculture, aquaculture, and other facilities.

1           “(2) ECONOMICALLY DISTRESSED AREA.—The  
2           term ‘economically distressed area’ means an area  
3           described in section 301(a) of the Public Works and  
4           Economic Development Act of 1965 (42 U.S.C.  
5           3161(a)).

6           “(3) GEOTHERMAL HEAT PUMP.—The term  
7           ‘geothermal heat pump’ means a system that pro-  
8           vides heating and cooling by exchanging heat from  
9           shallow geology, groundwater, or surface water  
10          using—

11                 “(A) a closed loop system, which transfers  
12                 heat by way of buried or immersed pipes that  
13                 contain a mix of water and working fluid; or

14                 “(B) an open loop system, which circulates  
15                 ground or surface water directly into the build-  
16                 ing and returns the water to the same aquifer  
17                 or surface water source.

18          “(c) PROGRAM.—

19                 “(1) IN GENERAL.—The Secretary shall sup-  
20                 port within the Geothermal Technologies Office a  
21                 program of research, development, and demonstra-  
22                 tion for geothermal heat pumps and the direct use  
23                 of geothermal energy.

1           “(2) AREAS.—The program under paragraph  
2           (1) may include research, development, demonstra-  
3           tion, and commercial application of—

4                   “(A) geothermal ground loop efficiency im-  
5                   provements, cost reductions, and improved in-  
6                   stallation and operations methods;

7                   “(B) the use of geothermal energy for  
8                   building-scale energy storage;

9                   “(C) the use of geothermal energy as a  
10                  grid management resource or seasonal energy  
11                  storage;

12                  “(D) geothermal heat pump efficiency im-  
13                  provements;

14                  “(E) the use of alternative fluids as a heat  
15                  exchange medium, such as hot water found in  
16                  mines and mine shafts, graywater, or other  
17                  fluids that may improve the economics of geo-  
18                  thermal heat pumps;

19                  “(F) heating of districts, neighborhoods,  
20                  communities, large commercial or public build-  
21                  ings, and industrial and manufacturing facili-  
22                  ties;

23                  “(G) the use of low temperature ground-  
24                  water for direct use; and

1                   “(H) system integration of direct use with  
2                   geothermal electricity production.

3                   “(3) ENVIRONMENTAL IMPACTS.—In carrying  
4                   out the program, the Secretary shall identify and  
5                   mitigate potential environmental impacts in accord-  
6                   ance with section 614(c).

7                   “(d) GRANTS.—

8                   “(1) IN GENERAL.—The Secretary shall carry  
9                   out the program established in subsection (c) by  
10                  making grants available to State, local, and Tribal  
11                  governments, institutions of higher education, non-  
12                  profit entities, National Laboratories, utilities, and  
13                  for-profit companies.

14                  “(2) PRIORITY.—In making grants under this  
15                  subsection, the Secretary may give priority to pro-  
16                  posals that apply to large buildings, commercial dis-  
17                  tricts, and residential communities that are located  
18                  in economically distressed areas and areas that the  
19                  Secretary determines to have high economic poten-  
20                  tial for geothermal district heating based on the re-  
21                  port, ‘Geovision: Harnessing the Heat Beneath our  
22                  Feet’ published by the Department in 2019, or a  
23                  successor report.”.

24                  (b) CONFORMING AMENDMENT.—Section 1(b) of the  
25                  Energy Independence and Security Act of 2007 (42

1 U.S.C. 17001 note) is amended in the table of contents  
2 by inserting after the item relating to section 616 the fol-  
3 lowing:

“616A. Geothermal heat pumps and direct use research and development.”.

4 **SEC. 2546. COST SHARING AND PROPOSAL EVALUATION.**

5 Section 617(b) of the Energy Independence and Se-  
6 curity Act of 2007 (42 U.S.C. 17196) is amended by strik-  
7 ing paragraph (2) and redesignating paragraphs (3) and  
8 (4) as paragraphs (2) and (3), respectively.

9 **SEC. 2547. ADVANCED GEOTHERMAL COMPUTING AND**  
10 **DATA SCIENCE RESEARCH AND DEVELOP-**  
11 **MENT.**

12 (a) IN GENERAL.—Section 618 of the Energy Inde-  
13 pendence and Security Act of 2007 (42 U.S.C. 17197) is  
14 amended to read as follows:

15 **“SEC. 618. ADVANCED GEOTHERMAL COMPUTING AND**  
16 **DATA SCIENCE RESEARCH AND DEVELOP-**  
17 **MENT.**

18 “(a) IN GENERAL.—The Secretary shall carry out a  
19 program of research and development of advanced com-  
20 puting and data science tools for geothermal energy.

21 “(b) PROGRAMS.—The program authorized in sub-  
22 section (a) shall include the following:

23 “(1) ADVANCED COMPUTING FOR GEOTHERMAL  
24 SYSTEMS TECHNOLOGIES.—Research, development,  
25 and demonstration of technologies to develop ad-

1 vanced data, machine learning, artificial intelligence,  
2 and related computing tools to assist in locating geo-  
3 thermal resources, to increase the reliability of site  
4 characterization, to increase the rate and efficiency  
5 of drilling, to improve induced seismicity mitigation,  
6 and to support enhanced geothermal systems tech-  
7 nologies.

8 “(2) GEOTHERMAL SYSTEMS RESERVOIR MOD-  
9 ELING.—Research, development, and demonstration  
10 of models of geothermal reservoir performance and  
11 enhanced geothermal systems reservoir stimulation  
12 technologies and techniques, with an emphasis on  
13 accurately modeling fluid and heat flow, permeability  
14 evolution, geomechanics, geochemistry, seismicity,  
15 and operational performance over time, including  
16 collaboration with industry and field validation.

17 “(c) COORDINATION.—In carrying out these pro-  
18 grams, the Secretary shall ensure coordination and con-  
19 sultation with the Department of Energy’s Office of  
20 Science. The Secretary shall ensure, to the maximum ex-  
21 tent practicable, coordination of these activities with the  
22 Department of Energy National Laboratories, institutes  
23 of higher education, and the private sector.”.

24 (b) CONFORMING AMENDMENT.—Section 1(b) of the  
25 Energy Independence and Security Act of 2007 (42

1 U.S.C. 17001 note) is amended in the table of contents  
2 by amending the item related to section 618 to read as  
3 follows:

“Sec. 618. Advanced geothermal computing and data science research and development.”.

4 **SEC. 2548. GEOTHERMAL WORKFORCE DEVELOPMENT.**

5 (a) IN GENERAL.—Section 619 of the Energy Inde-  
6 pendence and Security Act of 2007 (42 U.S.C. 17198) is  
7 amended to read as follows:

8 **“SEC. 619. GEOTHERMAL WORKFORCE DEVELOPMENT.**

9 “The Secretary shall support the development of a  
10 geothermal energy workforce through a program that—

11 “(1) facilitates collaboration between university  
12 students and researchers at the national labora-  
13 tories; and

14 “(2) prioritizes science in areas relevant to the  
15 mission of the Department through the application  
16 of geothermal energy tools and technologies.”.

17 (b) CONFORMING AMENDMENT.—Section 1(b) of the  
18 Energy Independence and Security Act of 2007 (42  
19 U.S.C. 17001 note) is amended in the table of contents  
20 by amending the item related to section 619 to read as  
21 follows:

“Sec. 619. Geothermal workforce development.”.



1 **SEC. 2549. ORGANIZATION AND ADMINISTRATION OF PRO-**  
2 **GRAMS.**

3 Section 621 of the Energy Independence and Security  
4 Act of 2007 (42 U.S.C. 17200) is amended to read as  
5 follows:

6 **“SEC. 621. ORGANIZATION AND ADMINISTRATION OF PRO-**  
7 **GRAMS.**

8 “(a) EDUCATION AND OUTREACH.—In carrying out  
9 the activities described in this subtitle, the Secretary shall  
10 support education and outreach activities to disseminate  
11 information on geothermal energy technologies and the  
12 geothermal energy workforce, including activities at the  
13 Frontier Observatory for Research in Geothermal Energy  
14 site or sites.

15 “(b) TECHNICAL ASSISTANCE.—In carrying out this  
16 subtitle, the Secretary shall also conduct technical assist-  
17 ance and analysis activities with eligible entities for the  
18 purpose of supporting the commercial application of ad-  
19 vances in geothermal energy systems development and op-  
20 erations, which may include activities that support ex-  
21 panding access to advanced geothermal energy tech-  
22 nologies for rural, Tribal, and low-income communities.

23 “(c) REPORT.—Every 5 years after the date of enact-  
24 ment of this section, the Secretary shall report to the  
25 Committee on Science and Technology of the House of  
26 Representatives and the Committee on Energy and Nat-

1 ural Resources of the Senate on advanced concepts and  
2 technologies to maximize the geothermal resource poten-  
3 tial of the United States.

4 “(d) **PROGRESS REPORTS.**—Not later than 1 year  
5 after the date of enactment of this section, and every 2  
6 years thereafter, the Secretary shall submit to the Com-  
7 mittee on Science and Technology of the House of Rep-  
8 resentatives and the Committee on Energy and Natural  
9 Resources of the Senate a report on the results of projects  
10 undertaken under this part and other such information  
11 the Secretary considers appropriate.”.

12 **SEC. 2550. REPEALS.**

13 (a) **IN GENERAL.**—Subtitle B of title VI of the En-  
14 ergy Independence and Security Act of 2007 (42 U.S.C.  
15 17191 et seq.) is amended by striking section 620.

16 (b) **CONFORMING AMENDMENT.**—Section 1(b) of the  
17 Energy Independence and Security Act of 2007 (42  
18 U.S.C. 17001 note) is amended in the table of contents  
19 by striking the item related to section 620.

20 **SEC. 2551. AUTHORIZATION OF APPROPRIATIONS.**

21 Section 623 of the Energy Independence and Security  
22 Act of 2007 (42 U.S.C. 17202) is amended to read as  
23 follows:

1 **“SEC. 623. AUTHORIZATION OF APPROPRIATIONS.**

2 “There are authorized to be appropriated to the Sec-  
3 retary to carry out the programs under this subtitle—

4 “(1) \$121,375,000 for fiscal year 2021;

5 “(2) \$132,750,000 for fiscal year 2022;

6 “(3) \$144,125,000 for fiscal year 2023;

7 “(4) \$150,500,000 for fiscal year 2024; and

8 “(5) \$151,875,000 for fiscal year 2025.”.

9 **SEC. 2552. INTERNATIONAL GEOTHERMAL ENERGY DEVEL-**  
10 **OPMENT.**

11 Section 624 of the Energy Independence and Security  
12 Act of 2007 (42 U.S.C. 17203) is amended—

13 (1) by amending subsection (a) to read as fol-  
14 lows:

15 “(a) IN GENERAL.—The Secretary of Energy, in co-  
16 ordination with other appropriate Federal and multilateral  
17 agencies (including the United States Agency for Inter-  
18 national Development) shall support collaborative efforts  
19 with international partners to promote the research, devel-  
20 opment, and demonstration of geothermal technologies  
21 used to develop hydrothermal and enhanced geothermal  
22 system resources.”; and

23 (2) by striking subsection (c).

1 **SEC. 2553. REAUTHORIZATION OF HIGH COST REGION GEO-**  
2 **THERMAL ENERGY GRANT PROGRAM.**

3 Section 625 of the Energy Independence and Security  
4 Act of 2007 (42 U.S.C. 17204) is amended—

5 (1) in subsection (a)(2), by inserting “ or heat”  
6 after “electrical power”; and

7 (2) by amending subsection (e) to read as fol-  
8 lows:

9 “(e) AUTHORIZATION OF APPROPRIATIONS.—Out of  
10 funds authorized under section 623, there is authorized  
11 to be appropriated to carry out this section \$5,000,000  
12 for each of fiscal years 2021 through 2025.”.

13 **PART 4—WATER POWER RESEARCH AND**  
14 **DEVELOPMENT ACT**

15 **SEC. 2561. WATER POWER RESEARCH AND DEVELOPMENT.**

16 (a) IN GENERAL.—Subtitle C of title VI of the En-  
17 ergy Independence and Security Act of 2007 (42 U.S.C.  
18 17211 et seq.) is amended to read as follows:

19 **“Subtitle C—Water Power**  
20 **Research and Development**

21 **“SEC. 631. SHORT TITLE.**

22 “This subtitle may be cited as the ‘Water Power Re-  
23 search and Development Act’.

24 **“SEC. 632. DEFINITIONS.**

25 “In this subtitle:

1           “(1) ELIGIBLE ENTITY.—The term ‘eligible en-  
2           tity’ means any of the following entities:

3                   “(A) An institution of higher education.

4                   “(B) A National Laboratory.

5                   “(C) A Federal research agency.

6                   “(D) A State research agency.

7                   “(E) A nonprofit research organization.

8                   “(F) An industrial entity or a multi-insti-  
9           tutional consortium thereof.

10           “(2) INSTITUTION OF HIGHER EDUCATION.—  
11           The term ‘institution of higher education’ has the  
12           meaning given such term in section 101 of the High-  
13           er Education Act of 1965 (20 U.S.C. 1001).

14           “(3) MARINE ENERGY.—The term ‘marine en-  
15           ergy’ means energy from—

16                   “(A) waves, tides, and currents in oceans,  
17           estuaries, and tidal areas;

18                   “(B) free flowing water in rivers, lakes,  
19           streams, and man-made channels;

20                   “(C) differentials in salinity and pressure  
21           gradients; and

22                   “(D) differentials in water temperature, in-  
23           cluding ocean thermal energy conversion.

24           “(4) NATIONAL LABORATORY.—The term ‘Na-  
25           tional Laboratory’ has the meaning given such term

1 in section 2(3) of the Energy Policy Act of 2005 (42  
2 U.S.C. 15801(3)).

3 “(5) WATER POWER.—The term ‘water power’  
4 refers to hydropower, including conduit power,  
5 pumped storage, and marine energy technologies.

6 “(6) MICROGRID.—The term ‘microgrid’ has  
7 the meaning given such term in section 641 of the  
8 Energy Independence and Security Act of 2007 (42  
9 U.S.C. 17231).

10 **“SEC. 633. WATER POWER TECHNOLOGY RESEARCH, DE-**  
11 **VELOPMENT, AND DEMONSTRATION.**

12 “The Secretary shall carry out a program to conduct  
13 research, development, demonstration, and commercial ap-  
14 plication of water power technologies in support of each  
15 of the following purposes:

16 “(1) To promote research, development, dem-  
17 onstration, and commercial application of water  
18 power generation technologies in order to increase  
19 capacity and reduce the cost of those technologies.

20 “(2) To promote research and development to  
21 improve the environmental impact of water power  
22 technologies.

23 “(3) To provide grid reliability and resilience,  
24 including through technologies that facilitate new

1 market opportunities, such as ancillary services, for  
2 water power.

3 “(4) To promote the development of water  
4 power technologies to improve economic growth and  
5 enhance cross-institutional foundational workforce  
6 development in the water power sector, including in  
7 coastal communities.

8 **“SEC. 634. HYDROPOWER RESEARCH, DEVELOPMENT, AND**  
9 **DEMONSTRATION.**

10 “The Secretary shall conduct a program of research,  
11 development, demonstration, and commercial application  
12 for technologies that improve the capacity, efficiency, resil-  
13 ience, security, reliability, affordability, and environmental  
14 impact, including potential cumulative environmental im-  
15 pacts, of hydropower systems. In carrying out such pro-  
16 gram, the Secretary shall prioritize activities designed  
17 to—

18 “(1) develop technology for—

19 “(A) non-powered dams, including aging  
20 and potentially hazardous dams;

21 “(B) pumped storage;

22 “(C) constructed waterways;

23 “(D) new stream-reach development;

24 “(E) modular and small dams;

25 “(F) increased operational flexibility; and

1                   “(G) enhancement of relevant existing fa-  
2                   cilities;

3                   “(2) develop new strategies and technologies,  
4                   including analytical methods, physical and numerical  
5                   tools, and advanced computing, as well as methods  
6                   to validate such methods and tools, in order to—

7                   “(A) extend the operational lifetime of hy-  
8                   dropower systems and their physical structures,  
9                   while improving environmental impact, includ-  
10                  ing potential cumulative environmental impacts;

11                  “(B) assist in device and system design,  
12                  installation, operation, and maintenance; and

13                  “(C) reduce costs, limit outages, and in-  
14                  crease unit and plant efficiencies, including by  
15                  examining the impact of changing water and  
16                  electricity demand on hydropower generation,  
17                  flexibility, and provision of grid services;

18                  “(3) study, in conjunction with other relevant  
19                  Federal agencies as appropriate, methods to improve  
20                  the hydropower licensing process, including by com-  
21                  piling current and accepted best practices, public  
22                  comments, and methodologies to assess the full  
23                  range of potential environmental and economic im-  
24                  pacts;



1           “(4) identify opportunities for joint research,  
2           development, and demonstration programs between  
3           hydropower systems, which may include—

4                   “(A) pumped storage systems and other  
5                   renewable energy systems;

6                   “(B) small hydro facilities and other en-  
7                   ergy storage systems;

8                   “(C) other hybrid energy systems;

9                   “(D) small hydro facilities and critical in-  
10                  frastructure, including water infrastructure;  
11                  and

12                  “(E) hydro facilities and responsive load  
13                  technologies, which may include smart buildings  
14                  and city systems;

15           “(5) improve the reliability of hydropower tech-  
16           nologies, including during extreme weather events;

17           “(6) develop methods and technologies to im-  
18           prove environmental impact, including potential cu-  
19           mulative environmental impacts, of hydropower and  
20           pumped storage technologies, including potential im-  
21           pacts on wildlife, such as—

22                   “(A) fisheries;

23                   “(B) aquatic life and resources;

24                   “(C) navigation of waterways; and

1           “(D) upstream and downstream environ-  
2           mental conditions, including sediment move-  
3           ment, water quality, and flow volumes;

4           “(7) identify ways to increase power generation  
5       by—

6           “(A) diversifying plant configuration op-  
7           tions;

8           “(B) improving pump-back efficiencies;

9           “(C) investigating multi-phase systems;

10          “(D) developing, testing, and monitoring  
11          advanced generators with faster cycling times,  
12          variable speeds, and improved efficiencies;

13          “(E) developing, testing, and monitoring  
14          advanced turbines capable of improving environ-  
15          mental impact, including potential cumulative  
16          environmental impacts, including small turbine  
17          designs;

18          “(F) developing standardized powertrain  
19          components;

20          “(G) developing components with advanced  
21          materials and manufacturing processes, includ-  
22          ing additive manufacturing; and

23          “(H) developing analytical tools that en-  
24          able hydropower to provide grid services that,

1           amongst other services, improve grid integra-  
2           tion of other energy sources;

3           “(8) advance new pumped storage technologies,  
4       including—

5               “(A) systems with adjustable speed and  
6               other new pumping and generating equipment  
7               designs;

8               “(B) modular systems;

9               “(C) alternative closed-loop systems, in-  
10              cluding mines and quarries; and

11              “(D) other innovative equipment and ma-  
12              terials as determined by the Secretary;

13           “(9) reduce civil works costs and construction  
14       times for hydropower and pumped storage systems,  
15       including comprehensive data and systems analysis  
16       of hydropower and pumped storage construction  
17       technologies and processes in order to identify areas  
18       for whole-system efficiency gains;

19           “(10) advance efficient and reliable integration  
20       of hydropower and pumped storage systems with the  
21       electric grid by—

22               “(A) improving methods for operational  
23               forecasting of renewable energy systems to  
24               identify opportunities for hydropower applica-  
25               tions in pumped storage and hybrid energy sys-

1           tems, including forecasting of seasonal and an-  
2           nual energy storage;

3           “(B) considering aggregating small distrib-  
4           uted hydropower assets; and

5           “(C) identifying barriers to grid scale im-  
6           plementation of hydropower and pumped stor-  
7           age technologies;

8           “(11) improve computational fluid dynamic  
9           modeling methods;

10          “(12) improve flow measurement methods, in-  
11          cluding maintenance of continuous flow measure-  
12          ment equipment;

13          “(13) identify best methods for compiling data  
14          on all hydropower resources and assets, including  
15          identifying potential for increased capacity; and

16          “(14) identify mechanisms to test and validate  
17          performance of hydropower and pumped storage  
18          technologies.

19   **“SEC. 635. MARINE ENERGY RESEARCH, DEVELOPMENT,**  
20           **AND DEMONSTRATION.**

21          “(a) IN GENERAL.—The Secretary, in consultation  
22          with the Department of Defense, Secretary of Commerce  
23          (acting through the Under Secretary of Commerce for  
24          Oceans and Atmosphere) and other relevant Federal agen-  
25          cies, shall conduct a program of research, development,

1 demonstration, and commercial application of marine en-  
2 ergy technology, including activities to—

3 “(1) assist technology development to improve  
4 the components, processes, and systems used for  
5 power generation from marine energy resources at a  
6 variety of scales;

7 “(2) establish and expand critical testing infra-  
8 structure and facilities necessary to—

9 “(A) demonstrate and prove marine energy  
10 devices at a range of scales in a manner that  
11 is cost-effective and efficient; and

12 “(B) accelerate the technological readiness  
13 and commercial application of such devices;

14 “(3) address marine energy resource variability  
15 issues, including through the application of energy  
16 storage technologies;

17 “(4) advance efficient and reliable integration  
18 of marine energy with the electric grid, which may  
19 include smart building systems;

20 “(5) identify and study critical short-term and  
21 long-term needs to maintaining a sustainable marine  
22 energy supply chain based in the United States;

23 “(6) increase the reliability, security, and resil-  
24 ience of marine energy technologies;

1           “(7) validate the performance, reliability, main-  
2           tainability, and cost of marine energy device designs  
3           and system components in an operating environ-  
4           ment;

5           “(8) consider the protection of critical infra-  
6           structure, such as adequate separation between ma-  
7           rine energy devices and submarine telecommuni-  
8           cations cables, including through the development of  
9           voluntary, consensus-based standards for such pur-  
10          poses;

11          “(9) identify opportunities for crosscutting re-  
12          search, development, and demonstration programs  
13          between existing energy research programs;

14          “(10) identify and improve, in conjunction with  
15          the Secretary of Commerce, acting through the  
16          Under Secretary of Commerce for Oceans and At-  
17          mosphere, and other relevant Federal agencies as  
18          appropriate, the environmental impact, including po-  
19          tential cumulative environmental impacts, of marine  
20          energy technologies, including—

21                 “(A) potential impacts on fisheries and  
22                 other marine resources; and

23                 “(B) developing technologies, including  
24                 mechanisms for self-evaluation, and other  
25                 means available for improving environmental

1 impact, including potential cumulative environ-  
2 mental impacts;

3 “(11) identify, in consultation with relevant  
4 Federal agencies, potential navigational impacts of  
5 marine energy technologies and strategies to prevent  
6 possible adverse impacts, in addition to opportunities  
7 for marine energy systems to aid the United States  
8 Coast Guard, such as remote sensing for coastal bor-  
9 der security;

10 “(12) develop numerical and physical tools, in-  
11 cluding models and monitoring technologies, to as-  
12 sist industry in device and system design, installa-  
13 tion, operation, and maintenance, including methods  
14 to validate such tools;

15 “(13) support materials science as it relates to  
16 marine energy technology, such as the development  
17 of corrosive-resistant materials;

18 “(14) improve marine energy resource fore-  
19 casting and general understanding of aquatic system  
20 behavior, including turbulence and extreme condi-  
21 tions;

22 “(15) develop metrics and voluntary, consensus-  
23 based standards, in coordination with the National  
24 Institute of Standards and Technology and appro-  
25 priate standard development organizations, for ma-

1       rine energy components, systems, and projects, in-  
2       cluding—

3               “(A) measuring performance of marine en-  
4               ergy technologies; and

5               “(B) characterizing environmental condi-  
6               tions;

7               “(16) enhance integration with hybrid energy  
8       systems, including desalination;

9               “(17) identify opportunities to integrate marine  
10      energy technologies into new and existing infrastruc-  
11      ture; and

12              “(18) to develop technology necessary to sup-  
13      port the use of marine energy—

14              “(A) for the generation and storage of  
15      power at sea; and

16              “(B) for the generation and storage of  
17      power to promote the resilience of coastal com-  
18      munities, including in applications relating to—

19                      “(i) desalination;

20                      “(ii) disaster recovery and resilience;

21                      and

22                      “(iii) community microgrids in iso-  
23      lated power systems.

24      “(b) STUDY OF NON-POWER SECTOR APPLICATIONS  
25      FOR ADVANCED MARINE ENERGY TECHNOLOGIES.—



1           “(1) IN GENERAL.—The Secretary, in consulta-  
2           tion with the Secretary of Transportation and the  
3           Secretary of Commerce, shall conduct a study to ex-  
4           amine opportunities for research and development in  
5           advanced marine energy technologies for non-power  
6           sector applications, including applications with re-  
7           spect to—

8                     “(A) the maritime transportation sector;

9                     “(B) associated maritime energy infra-  
10           structure, including infrastructure that serves  
11           ports, to improve system resilience and disaster  
12           recovery; and

13                    “(C) enabling scientific missions at sea  
14           and in extreme environments, including the  
15           Arctic.

16           “(2) REPORT.—Not later than 1 year after the  
17           date of enactment of this Act, the Secretary shall  
18           submit to the Committee on Energy and Natural  
19           Resources of the Senate and the Committee on  
20           Science, Space, and Technology of the House of  
21           Representatives a report that describes the results of  
22           the study conducted under paragraph (1).

23   **“SEC. 636. NATIONAL MARINE ENERGY CENTERS.**

24           “(a) IN GENERAL.—The Secretary shall award  
25           grants, each such grant up to \$10,000,000 per year, to

1 institutions of higher education (or consortia thereof)  
2 for—

3 “(1) the continuation and expansion of the re-  
4 search, development, demonstration, testing, and  
5 commercial application activities at the National Ma-  
6 rine Energy Centers (referred to in this section as  
7 ‘Centers’) established as of January 1, 2020; and

8 “(2) the establishment of new National Marine  
9 Energy Centers.

10 “(b) LOCATION SELECTION.—In selecting institu-  
11 tions of higher education for new Centers, the Secretary  
12 shall consider the following criteria:

13 “(1) Whether the institution hosts an existing  
14 marine energy research and development program.

15 “(2) Whether the institution has proven tech-  
16 nical expertise to support marine energy research.

17 “(3) Whether the institution has access to ma-  
18 rine resources.

19 “(c) PURPOSES.—The Centers shall coordinate  
20 among themselves, the Department, and National Labora-  
21 tories to—

22 “(1) advance research, development, demonstra-  
23 tion, and commercial application of marine energy  
24 technologies in response to industry and commercial  
25 needs;

1           “(2) support in-water testing and demonstra-  
2           tion of marine energy technologies, including facili-  
3           ties capable of testing—

4                   “(A) marine energy systems of various  
5           technology readiness levels and scales;

6                   “(B) a variety of technologies in multiple  
7           test berths at a single location;

8                   “(C) arrays of technology devices; and

9                   “(D) interconnectivity to an electrical grid,  
10          including microgrids; and

11          “(3) collect and disseminate information on  
12          best practices in all areas relating to developing and  
13          managing marine energy resources and energy sys-  
14          tems.

15          “(d) COORDINATION.—To the extent practicable, the  
16          Centers shall coordinate their activities with the Secretary  
17          of Commerce, acting through the Undersecretary of Com-  
18          merce for Oceans and Atmosphere, and other relevant  
19          Federal agencies.

20          “(e) TERMINATION.—To the extent otherwise author-  
21          ized by law, the Secretary may terminate funding for a  
22          Center described in paragraph (a) if such Center is under-  
23          performing.

1   **“SEC. 637. ORGANIZATION AND ADMINISTRATION OF PRO-**  
2                                   **GRAMS.**

3           “(a) COORDINATION.—In carrying out this subtitle,  
4 the Secretary shall coordinate activities, and effectively  
5 manage cross-cutting research priorities across programs  
6 of the Department and other relevant Federal agencies,  
7 including the National Laboratories and the National Ma-  
8 rine Energy Centers.

9           “(b) COLLABORATION.—

10           “(1) IN GENERAL.—In carrying out this sub-  
11 title, the Secretary shall collaborate with industry,  
12 National Laboratories, other relevant Federal agen-  
13 cies, institutions of higher education, including Mi-  
14 nority Serving Institutions, National Marine Energy  
15 Centers, Tribal entities, including Alaska Native  
16 Corporations, and international bodies with relevant  
17 scientific and technical expertise.

18           “(2) PARTICIPATION.—To the extent prac-  
19 ticable, the Secretary shall encourage research  
20 projects that promote collaboration between entities  
21 specified in paragraph (1) and include entities not  
22 historically associated with National Marine Energy  
23 Centers, such as Minority Serving Institutions.

24           “(3) INTERNATIONAL COLLABORATION.—The  
25 Secretary of Energy, in coordination with other ap-  
26 propriate Federal and multilateral agencies (includ-

1       ing the United States Agency for International De-  
2       velopment) shall support collaborative efforts with  
3       international partners to promote the research, de-  
4       velopment, and demonstration of water power tech-  
5       nologies used to develop hydropower, pump storage,  
6       and marine energy resources.

7       “(c) DISSEMINATION OF RESULTS AND PUBLIC  
8       AVAILABILITY.—The Secretary shall—

9               “(1) publish the results of projects supported  
10       under this subtitle through Department websites, re-  
11       ports, databases, training materials, and industry  
12       conferences, including information discovered after  
13       the completion of such projects, withholding any in-  
14       dustrial proprietary information; and

15              “(2) share results of such projects with the  
16       public except to the extent that the information is  
17       protected from disclosure under section 552(b) of  
18       title 5, United States Code.

19       “(d) AWARD FREQUENCY.—The Secretary shall so-  
20       licit applications for awards under this subtitle no less fre-  
21       quently than once per fiscal year.

22       “(e) EDUCATION AND OUTREACH.—In carrying out  
23       the activities described in this subtitle, the Secretary shall  
24       support education and outreach activities to disseminate  
25       information and promote public understanding of water

1 power technologies and the water power workforce, includ-  
2 ing activities at the National Marine Energy Centers.

3 “(f) TECHNICAL ASSISTANCE AND WORKFORCE DE-  
4 VELOPMENT.—In carrying out this subtitle, the Secretary  
5 may also conduct, for purposes of supporting technical,  
6 non-hardware, and information-based advances in water  
7 power systems development and operations—

8 “(1) technical assistance and analysis activities  
9 with eligible entities, including activities that sup-  
10 port expanding access to advanced water power tech-  
11 nologies for rural, Tribal, and low-income commu-  
12 nities; and

13 “(2) workforce development and training activi-  
14 ties, including to support the dissemination of stand-  
15 ards and best practices for enabling water power  
16 production.

17 “(g) STRATEGIC PLAN.—In carrying out the activi-  
18 ties described in this subtitle, the Secretary shall—

19 “(1) not later than one year after the date of  
20 the enactment of the Clean Economy Jobs and Inno-  
21 vation Act, draft a plan, considering input from rel-  
22 evant stakeholders such as industry and academia,  
23 to implement the programs described in this subtitle  
24 and update the plan on an annual basis; and

1           “(2) the plan shall address near-term (up to 2  
2       years), mid-term (up to 7 years), and long-term (up  
3       to 15 years) challenges to the advancement of water  
4       power systems.

5       “(h) REPORT TO CONGRESS.—Not later than 1 year  
6   after the date of the enactment of the Clean Economy  
7   Jobs and Innovation Act, and at least once every 2 years  
8   thereafter, the Secretary shall provide, and make available  
9   to the public and the relevant authorizing and appropria-  
10   tions committees of Congress, a report on the findings of  
11   research conducted and activities carried out pursuant to  
12   this subtitle, including the most current strategic plan  
13   under subsection (g) and the progress made in imple-  
14   menting such plan.

15   **“SEC. 638. APPLICABILITY OF OTHER LAWS.**

16       “Nothing in this subtitle shall be construed as  
17   waiving, modifying, or superseding the applicability of any  
18   requirement under any environmental or other Federal or  
19   State law.

20   **“SEC. 639. AUTHORIZATION OF APPROPRIATIONS.**

21       “There are authorized to be appropriated to the Sec-  
22   retary to carry out this subtitle—

23           “(1) \$152,750,000 for fiscal year 2021, includ-  
24       ing   \$112,580,000   for   marine   energy   and

1       \$40,170,000 for hydropower research, development,  
2       and demonstration activities;

3           “(2) \$157,678,300 for fiscal year 2022, includ-  
4       ing \$116,303,200 for marine energy and  
5       \$41,375,100 for hydropower research, development,  
6       and demonstration activities;

7           “(3) \$162,791,915 for fiscal year 2023, includ-  
8       ing \$120,175,562 for marine energy and  
9       \$42,616,353 for hydropower research, development,  
10      and demonstration activities;

11          “(4) \$168,098,139 for fiscal year 2024, includ-  
12      ing \$124,203,295 for marine energy and  
13      \$43,894,844 for hydropower research, development,  
14      and demonstration activities; and

15          “(5) \$173,604,558 for fiscal year 2025, includ-  
16      ing \$128,392,869 for marine energy and  
17      \$45,211,689 for hydropower research, development,  
18      and demonstration activities.”.

19      (b) CONFORMING TABLE OF CONTENTS AMEND-  
20      MENT.—The table of contents for the Energy Independ-  
21      ence and Security Act of 2007 is amended by striking the  
22      items relating to subtitle C of title VI and inserting the  
23      following:

        “Subtitle C—Water Power Research and Development

        “Sec. 631. Short title.

        “Sec. 632. Definitions.

        “Sec. 633. Water power technology research, development, and demonstration.



“Sec. 634. Hydropower research, development, and demonstration.  
“Sec. 635. Marine energy research, development, and demonstration.  
“Sec. 636. National Marine Energy Centers.  
“Sec. 637. Organization and administration of programs.  
“Sec. 638. Applicability of other laws.  
“Sec. 639. Authorization of appropriations.”.

1 **SEC. 2562. CONFORMING AMENDMENTS.**

2 (a) ENERGY POLICY ACT OF 2005.—The Energy  
3 Policy Act of 2005 (42 U.S.C. 15801 et seq.) is amend-  
4 ed—

5 (1) in section 201(a), by striking “ocean (in-  
6 cluding tidal, wave, current, and thermal)” and in-  
7 serting “marine”;

8 (2) in section 203(b)(2), by—

9 (A) inserting “marine energy (as defined  
10 in section 632 of the Energy Independence and  
11 Security Act of 2007) or” before “electric en-  
12 ergy”; and

13 (B) by striking “ocean (including tidal,  
14 wave, current, and thermal)”;

15 (3) in section 931(a)(2)(E)(i), by striking  
16 “ocean energy, including wave energy” and inserting  
17 “marine energy (as defined in section 632 of the En-  
18 ergy Independence and Security Act of 2007)”; and

19 (4) in section 1833(a), by striking “ocean en-  
20 ergy resources (including tidal, wave, and thermal  
21 energy)” and inserting “marine energy resources

1 (within the meaning of section 632 of the Energy  
2 Independence and Security Act of 2007)”).

3 (b) ENERGY POLICY ACT OF 1992.—Section 1212 of  
4 the Energy Policy Act of 1992 (42 U.S.C. 13317) is  
5 amended—

6 (1) in subsection (a)(4)(A)(i), by striking  
7 “ocean (including tidal, wave, current, and ther-  
8 mal)” and inserting “marine energy (as defined in  
9 section 632 of the Energy Independence and Secu-  
10 rity Act of 2007)”;

11 (2) in subsection (b), in the matter preceding  
12 paragraph (1), by striking “ocean (including tidal,  
13 wave, current, and thermal)” and inserting “marine  
14 energy (as defined in section 632 of the Energy  
15 Independence and Security Act of 2007)”;

16 (3) in subsection (e)(1), in the first sentence, by  
17 striking “ocean (including tidal, wave, current, and  
18 thermal)” and inserting “marine energy (as defined  
19 in section 632 of the Energy Independence and Se-  
20 curity Act of 2007)”.

21 (c) RENEWABLE ENERGY AND ENERGY EFFICIENCY  
22 TECHNOLOGY COMPETITIVENESS ACT OF 1989.—The Re-  
23 newable Energy and Energy Efficiency Technology Com-  
24 petitiveness Act of 1989 (42 U.S.C. 12001 et seq.) is  
25 amended—

1 (1) in section 4 (42 U.S.C. 12003)—

2 (A) in subsection (a)(5), by striking  
3 “Ocean” and inserting “Marine”; and

4 (B) in subsection (c), in the matter pre-  
5 ceding paragraph (1), by striking “Ocean” and  
6 inserting “Marine”; and

7 (2) in section 9(c) (42 U.S.C. 12006(c)), by  
8 striking “ocean,” and inserting “marine,”.

9 **Subtitle F—Public Lands**  
10 **Renewable Energy Development**

11 **SEC. 2601. DEFINITIONS.**

12 In this subtitle:

13 (1) COVERED LAND.—The term “covered land”  
14 means land that is—

15 (A) public lands administered by the Sec-  
16 retary; and

17 (B) not excluded from the development of  
18 geothermal, solar, or wind energy under—

19 (i) a land use plan established under  
20 the Federal Land Policy and Management  
21 Act of 1976 (43 U.S.C. 1701 et seq.); or

22 (ii) other Federal law.

23 (2) EXCLUSION AREA.—The term “exclusion  
24 area” means covered land that is identified by the

1 Bureau of Land Management as not suitable for de-  
2 velopment of renewable energy projects.

3 (3) FEDERAL LAND.—The term “Federal land”  
4 means public lands.

5 (4) FUND.—The term “Fund” means the Re-  
6 newable Energy Resource Conservation Fund estab-  
7 lished by section 2608(c)(1).

8 (5) PRIORITY AREA.—The term “priority area”  
9 means covered land identified by the land use plan-  
10 ning process of the Bureau of Land Management as  
11 being a preferred location for a renewable energy  
12 project, including a designated leasing area (as de-  
13 fined in section 2801.5(b) of title 43, Code of Fed-  
14 eral Regulations (or a successor regulation)) that is  
15 identified under the rule of the Bureau of Land  
16 Management entitled “Competitive Processes,  
17 Terms, and Conditions for Leasing Public Lands for  
18 Solar and Wind Energy Development and Technical  
19 Changes and Corrections” (81 Fed. Reg. 92122  
20 (December 19, 2016)) (or a successor regulation).

21 (6) PUBLIC LANDS.—The term “public lands”  
22 has the meaning given that term in section 103 of  
23 the Federal Land Policy and Management Act of  
24 1976 (43 U.S.C. 1702).

1 (7) RENEWABLE ENERGY PROJECT.—The term  
2 “renewable energy project” means a project carried  
3 out on covered land that uses wind, solar, or geo-  
4 thermal energy to generate energy.

5 (8) SECRETARY.—The term “Secretary” means  
6 the Secretary of the Interior.

7 (9) VARIANCE AREA.—The term “variance  
8 area” means covered land that is—

9 (A) not an exclusion area;

10 (B) not a priority area; and

11 (C) identified by the Secretary as poten-  
12 tially available for renewable energy develop-  
13 ment and could be approved without a plan  
14 amendment, consistent with the principles of  
15 multiple use (as that term is defined in the  
16 Federal Land Policy and Management Act of  
17 1976 (43 U.S.C. 1701 et seq.)).

18 **SEC. 2602. LAND USE PLANNING; SUPPLEMENTS TO PRO-**  
19 **GRAMMATIC ENVIRONMENTAL IMPACT**  
20 **STATEMENTS.**

21 (a) PRIORITY AREAS.—

22 (1) IN GENERAL.—The Secretary, in consulta-  
23 tion with the Secretary of Energy, shall establish  
24 priority areas on covered land for geothermal, solar,  
25 and wind energy projects. Projects located in those

1 priority areas shall be given the highest priority for  
2 review, and shall be offered the opportunity to par-  
3 ticipate in any regional mitigation plan developed for  
4 the relevant priority areas.

5 (2) DEADLINE.—

6 (A) GEOTHERMAL ENERGY.—For geo-  
7 thermal energy, the Secretary shall establish  
8 priority areas as soon as practicable, but not  
9 later than 5 years, after the date of the enact-  
10 ment of this Act.

11 (B) SOLAR ENERGY.—For solar energy,  
12 solar Designated Leasing Areas, including the  
13 solar energy zones established by the 2012  
14 western solar plan of the Bureau of Land Man-  
15 agement and any subsequent land use plan  
16 amendments, shall be considered to be priority  
17 areas for solar energy projects. The Secretary  
18 shall establish additional solar priority areas as  
19 soon as practicable, but not later than 3 years,  
20 after the date of the enactment of this Act.

21 (C) WIND ENERGY.—For wind energy, the  
22 Secretary shall establish additional wind pri-  
23 ority areas as soon as practicable, but not later  
24 than 3 years, after the date of the enactment  
25 of this Act.

1 (b) VARIANCE AREAS.—To the maximum extent  
2 practicable, variance areas shall be considered for renew-  
3 able energy project development, consistent with the prin-  
4 ciples of multiple use (as defined in the Federal Land Pol-  
5 icy and Management Act of 1976 (43 U.S.C. 1701 et  
6 seq.)).

7 (c) REVIEW AND MODIFICATION.—Not less than once  
8 every 5 years, the Secretary shall—

9 (1) review the adequacy of land allocations for  
10 geothermal, solar, and wind energy priority and vari-  
11 ance areas for the purpose of encouraging new re-  
12 newable energy development opportunities; and

13 (2) based on the review carried out under para-  
14 graph (1), add, modify, or eliminate priority, vari-  
15 ance, and exclusion areas.

16 (d) COMPLIANCE WITH THE NATIONAL ENVIRON-  
17 MENTAL POLICY ACT.—For purposes of this section, com-  
18 pliance with the National Environmental Policy Act of  
19 1969 (42 U.S.C. 4321 et seq.) shall be accomplished—

20 (1) for geothermal energy, by supplementing  
21 the October 2008 final programmatic environmental  
22 impact statement for geothermal leasing in the  
23 Western United States and incorporating any addi-  
24 tional regional analyses that have been completed by

1 Federal agencies since the programmatic environ-  
2 mental impact statement was finalized;

3 (2) for solar energy, by supplementing the July  
4 2012 final programmatic environmental impact  
5 statement for solar energy development and incor-  
6 porating any additional regional analyses that have  
7 been completed by Federal agencies since the pro-  
8 grammatic environmental impact statement was fi-  
9 nalized; and

10 (3) for wind energy, by supplementing the July  
11 2005 final programmatic environmental impact  
12 statement for wind energy development and incor-  
13 porating any additional regional analyses that have  
14 been completed by Federal agencies since the pro-  
15 grammatic environmental impact statement was fi-  
16 nalized.

17 (e) NO EFFECT ON PROCESSING APPLICATIONS.—  
18 Any requirements to prepare a supplement to a pro-  
19 grammatic environmental impact statement under this  
20 section shall not result in any delay in processing a pend-  
21 ing application for a renewable energy project.

22 (f) COORDINATION.—In developing a supplement re-  
23 quired by this section, the Secretary shall coordinate, on  
24 an ongoing basis, with appropriate State, Tribal, and local  
25 governments, transmission infrastructure owners and op-



erators, developers, and other appropriate entities to ensure that priority areas identified by the Secretary are—

(1) economically viable (including having access to existing and/or planned transmission lines);

(2) likely to avoid or minimize impacts to habitat for animals and plants, recreation, cultural resources, and other uses of covered land; and

(3) consistent with section 202 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1712), including subsection (c)(9) of that section (43 U.S.C. 1712(c)(9)).

**SEC. 2603. ENVIRONMENTAL REVIEW ON COVERED LAND.**

(a) IN GENERAL.—If the Secretary determines that a proposed renewable energy project has been sufficiently analyzed by a programmatic environmental impact statement conducted under section 2602(d), the Secretary shall not require any additional review under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.). The Secretary shall publish any such project determinations on a publicly available website.

(b) ADDITIONAL ENVIRONMENTAL REVIEW.—If the Secretary determines that additional environmental review under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) is necessary for a proposed renewable energy project, the Secretary shall rely on the analysis in

1 the programmatic environmental impact statement con-  
2 ducted under section 2602(d), to the maximum extent  
3 practicable when analyzing the potential impacts of the  
4 project.

5 (c) RELATIONSHIP TO OTHER LAW.—Nothing in this  
6 section modifies or supersedes any requirement under ap-  
7 plicable law.

8 **SEC. 2604. PROGRAM TO IMPROVE RENEWABLE ENERGY**  
9 **PROJECT PERMIT COORDINATION.**

10 (a) ESTABLISHMENT.—The Secretary shall establish  
11 a national Renewable Energy Coordination Office and  
12 State, district, or field offices with responsibility to estab-  
13 lish and implement a program to improve Federal permit  
14 coordination with respect to renewable energy projects on  
15 covered land and other activities deemed necessary by the  
16 Secretary. In carrying out the program, the Secretary may  
17 temporarily assign qualified staff to Renewable Energy  
18 Coordination Offices to expedite the permitting of renew-  
19 able energy projects.

20 (b) MEMORANDUM OF UNDERSTANDING.—

21 (1) IN GENERAL.—Not later than 180 days  
22 after the date of the enactment of this Act, the Sec-  
23 retary shall enter into a memorandum of under-  
24 standing for purposes of this section, including to  
25 specifically expedite the environmental analysis of

1 applications for projects proposed in a variance area  
2 or a priority area, with the Secretary of Defense.

3 (2) STATE AND TRIBAL PARTICIPATION.—The  
4 Secretary may request the Governor of any inter-  
5 ested State or any Tribal leader of any interested  
6 Indian Tribe (as defined in section 4 of the Indian  
7 Self-Determination and Education Assistance Act  
8 (25 U.S.C. 5304)) to be a signatory to the memo-  
9 randum of understanding under paragraph (1).

10 (c) DESIGNATION OF QUALIFIED STAFF.—

11 (1) IN GENERAL.—Not later than 30 days after  
12 the date on which the memorandum of under-  
13 standing under subsection (b) is executed, all Fed-  
14 eral signatories, as appropriate, shall identify for  
15 each of the Bureau of Land Management Renewable  
16 Energy Coordination Offices one or more employees  
17 who have expertise in the regulatory issues relating  
18 to the office in which the employee is employed, in-  
19 cluding, as applicable, particular expertise in—

20 (A) consultation regarding, and prepara-  
21 tion of, biological opinions under section 7 of  
22 the Endangered Species Act of 1973 (16 U.S.C.  
23 1536);

1 (B) permits under section 404 of the Fed-  
2 eral Water Pollution Control Act (33 U.S.C.  
3 1344);

4 (C) regulatory matters under the Clean Air  
5 Act (42 U.S.C. 7401 et seq.);

6 (D) the Federal Land Policy and Manage-  
7 ment Act of 1976 (43 U.S.C. 1701 et seq.);

8 (E) the Migratory Bird Treaty Act (16  
9 U.S.C. 703 et seq.);

10 (F) the preparation of analyses under the  
11 National Environmental Policy Act of 1969 (42  
12 U.S.C. 4321 et seq.);

13 (G) implementation of the requirements of  
14 section 306108 of title 54, United States Code  
15 (formerly known as section 106 of the National  
16 Historic Preservation Act);

17 (H) the Bald and Golden Eagle Protection  
18 Act (16 U.S.C. 668 through 668d); and

19 (I) section 100101(a), chapter 1003, and  
20 sections 100751(a), 100752, 100753 and  
21 102101 of title 54 , United States Code (pre-  
22 viously known as the “National Park Service  
23 Organic Act”).

24 (2) DUTIES.—Each employee assigned under  
25 paragraph (1) shall—

1 (A) be responsible for addressing all issues  
2 relating to the jurisdiction of the home office or  
3 agency of the employee; and

4 (B) participate as part of the team of per-  
5 sonnel working on proposed energy projects,  
6 planning, monitoring, inspection, enforcement,  
7 and environmental analyses.

8 (d) ADDITIONAL PERSONNEL.—The Secretary may  
9 assign such additional personnel for the Bureau of Land  
10 Management Renewable Energy Coordination Offices as  
11 are necessary to ensure the effective implementation of  
12 any programs administered by the offices in accordance  
13 with the multiple use mandate of the Federal Land Policy  
14 and Management Act of 1976 (43 U.S.C. 1701 et seq.).

15 (e) CLARIFICATION OF EXISTING AUTHORITY.—  
16 Under section 307 of the Federal Land Policy and Man-  
17 agement Act of 1976 (43 U.S.C. 1737), the Bureau of  
18 Land Management may—

19 (1) accept donations for the purposes of public  
20 lands management; and

21 (2) accept donations from renewable energy  
22 companies working on public lands to help cover the  
23 costs of environmental reviews.

24 (f) REPORT TO CONGRESS.—

1           (1) IN GENERAL.—Not later than February 1  
2           of the first fiscal year beginning after the date of the  
3           enactment of this Act, and each February 1 there-  
4           after, the Secretary shall submit to the Committee  
5           on Energy and Natural Resources of the Senate and  
6           the Committee on Natural Resources of the House  
7           of Representatives a report describing the progress  
8           made under the program established under sub-  
9           section (a) during the preceding year.

10          (2) INCLUSIONS.—Each report under this sub-  
11          section shall include—

12                 (A) projections for renewable energy pro-  
13                 duction and capacity installations; and

14                 (B) a description of any problems relating  
15                 to leasing, permitting, siting, or production.

16 **SEC. 2605. INCREASING ECONOMIC CERTAINTY.**

17          (a) CONSIDERATIONS.—The Secretary is authorized  
18          to and shall consider acreage rental rates, capacity fees,  
19          and other recurring annual fees in total when evaluating  
20          existing rates paid for the use of Federal land by renew-  
21          able energy projects.

22          (b) INCREASES IN BASE RENTAL RATES.—Once a  
23          base rental rate is established upon the issuance of a  
24          right-of-way authorization, increases in the base rent shall  
25          be limited to the Implicit Price Deflator–Gross Domestic

1 Product (IPD–GDP) index for the entire term of the  
2 right-of-way authorization.

3 (c) REDUCTIONS IN BASE RENTAL RATES.—The  
4 Secretary is authorized to reduce acreage rental rates and  
5 capacity fees, or both, for existing and new wind and solar  
6 authorizations if the Secretary determines—

7 (1) that the existing rates—

8 (A) exceed fair market value;

9 (B) impose economic hardships;

10 (C) limit commercial interest in a competi-  
11 tive lease sale or right-of-way grant; or

12 (D) are not competitively priced compared  
13 to other available land; or

14 (2) that a reduced rental rate or capacity fee is  
15 necessary to promote the greatest use of wind and  
16 solar energy resources, especially those resources in-  
17 side priority areas. Rental rates and capacity fees  
18 for projects that are within the boundaries of a Des-  
19 ignated Leasing Area but not formally recognized as  
20 being in such an area shall be equivalent to rents  
21 and fees for new leases inside of a Designated Leas-  
22 ing Area.

23 **SEC. 2606. LIMITED GRANDFATHERING.**

24 (a) DEFINITION OF PROJECT.—In this section, the  
25 term “project” means a system described in section

1 2801.9(a)(4) of title 43, Code of Federal Regulations (as  
2 in effect on the date of enactment of this Act).

3 (b) REQUIREMENT TO PAY RENTS AND FEES.—Un-  
4 less otherwise agreed to by the owner of a project, the  
5 owner of a project that applied for a right-of-way under  
6 section 501 of the Federal Land Policy and Management  
7 Act of 1976 (43 U.S.C. 1761) on or before December 19,  
8 2016, shall be obligated to pay with respect to the right-  
9 of-way all rents and fees in effect before the effective date  
10 of the rule of the Bureau of Land Management entitled  
11 “Competitive Processes, Terms, and Conditions for Leas-  
12 ing Public Lands for Solar and Wind Energy Development  
13 and Technical Changes and Corrections” (81 Fed. Reg.  
14 92122 (December 19, 2016)).

15 **SEC. 2607. RENEWABLE ENERGY GOAL.**

16 The Secretary shall seek to issue permits that, in  
17 total, authorize production of not less than 25 gigawatts  
18 of electricity from wind, solar, and geothermal energy  
19 projects by not later than 2025, through management of  
20 public lands and administration of Federal laws.

21 **SEC. 2608. DISPOSITION OF REVENUES.**

22 (a) DISPOSITION OF REVENUES.—Beginning on Jan-  
23 uary 1, 2020, of the amounts collected as bonus bids, rent-  
24 als, fees, or other payments under a right-of-way, permit,  
25 lease, or other authorization (other than under section



1 504(g) of the Federal Land Policy and Management Act  
2 of 1976 (43 U.S.C. 1764(g))) for the development of wind  
3 or solar energy on covered land the following shall be made  
4 available without further appropriation or fiscal year limi-  
5 tation as follows:

6 (1) Twenty-five percent shall be paid by the  
7 Secretary of the Treasury to the State within the  
8 boundaries of which the revenue is derived.

9 (2) Twenty-five percent shall be paid by the  
10 Secretary of the Treasury to the one or more coun-  
11 ties within the boundaries of which the revenue is  
12 derived, to be allocated among the counties based on  
13 the percentage of land from which the revenue is de-  
14 rived.

15 (3) Fifteen percent shall be deposited in the  
16 Treasury and be made available to the Secretary to  
17 carry out the program established under this sub-  
18 title, including the transfer of the funds by the Bu-  
19 reau of Land Management to other Federal agencies  
20 and State agencies to facilitate the processing of re-  
21 newable energy permits on Federal land, with pri-  
22 ority given to using the amounts, to the maximum  
23 extent practicable without detrimental impacts to  
24 emerging markets, to expediting the issuance of per-  
25 mits required for the development of renewable en-

1       ergy projects in the States from which the revenues  
2       are derived.

3           (4) Twenty-five percent shall be deposited in  
4       the Renewable Energy Resource Conservation Fund  
5       established by subsection (c).

6           (5) The remainder shall be deposited into the  
7       general fund of the Treasury for purposes of reduc-  
8       ing the annual Federal budget deficit.

9       (b) PAYMENTS TO STATES AND COUNTIES.—

10           (1) IN GENERAL.—Amounts paid to States and  
11       counties under subsection (a) shall be used con-  
12       sistent with section 35 of the Mineral Leasing Act  
13       (30 U.S.C. 191).

14           (2) PAYMENTS IN LIEU OF TAXES.—A payment  
15       to a county under paragraph (1) shall be in addition  
16       to a payment in lieu of taxes received by the county  
17       under chapter 69 of title 31, United States Code.

18       (c) RENEWABLE ENERGY RESOURCE CONSERVATION  
19       FUND.—

20           (1) IN GENERAL.—There is established in the  
21       Treasury a fund to be known as the Renewable En-  
22       ergy Resource Conservation Fund, which shall be  
23       administered by the Secretary.

24           (2) USE OF FUNDS.—The Secretary may make  
25       amounts in the Fund available to Federal, State,

1 local, and Tribal agencies to be distributed in re-  
2 gions in which renewable energy projects are located  
3 on Federal land, for the purposes of—

4 (A) restoring and protecting—

5 (i) fish and wildlife habitat for af-  
6 fected species;

7 (ii) fish and wildlife corridors for af-  
8 fected species; and

9 (iii) wetlands, streams, rivers, and  
10 other natural water bodies in areas af-  
11 fected by wind, geothermal, or solar energy  
12 development; and

13 (B) preserving and improving recreational  
14 access to Federal land and water in an affected  
15 region through an easement, right-of-way, or  
16 other instrument from willing landowners for  
17 the purpose of enhancing public access to exist-  
18 ing Federal land and water that is inaccessible  
19 or restricted.

20 (3) RESTRICTION ON USE OF FUNDS.—No  
21 funds made available under this subsection may be  
22 used for the purchase of real property unless in ful-  
23 fillment of paragraph (2)(B).

24 (4) PARTNERSHIPS.—The Secretary may enter  
25 into cooperative agreements with State and Tribal

1 agencies, nonprofit organizations, and other appro-  
2 priate entities to carry out the activities described in  
3 subparagraphs (A) and (B) of paragraph (2).

4 (5) INVESTMENT OF FUND.—

5 (A) IN GENERAL.—Any amounts deposited  
6 in the Fund shall earn interest in an amount  
7 determined by the Secretary of the Treasury on  
8 the basis of the current average market yield on  
9 outstanding marketable obligations of the  
10 United States of comparable maturities.

11 (B) USE.—Any interest earned under sub-  
12 paragraph (A) may be expended in accordance  
13 with this subsection.

14 (6) REPORT TO CONGRESS.—At the end of each  
15 fiscal year, the Secretary shall report to the Com-  
16 mittee on Natural Resources of the House of Rep-  
17 resentatives and the Committee on Energy and Nat-  
18 ural Resources of the Senate—

19 (A) the amount collected as described in  
20 subsection (a), by source, during that fiscal  
21 year;

22 (B) the amount and purpose of payments  
23 during that fiscal year to each Federal, State,  
24 local, and Tribal agency under paragraph (2);  
25 and

1 (C) the amount remaining in the Fund at  
2 the end of the fiscal year.

3 (7) INTENT OF CONGRESS.—It is the intent of  
4 Congress that the revenues deposited and used in  
5 the Fund shall supplement (and not supplant) an-  
6 nual appropriations for activities described in sub-  
7 paragraphs (A) and (B) of paragraph (2).

8 **SEC. 2609. PROMOTING AND ENHANCING DEVELOPMENT**  
9 **OF GEOTHERMAL ENERGY.**

10 (a) IN GENERAL.—Section 234(a) of the Energy Pol-  
11 icy Act of 2005 (42 U.S.C. 15873(a)) is amended by strik-  
12 ing “in the first 5 fiscal years beginning after the date  
13 of enactment of this Act” and inserting “through fiscal  
14 year 2022”.

15 (b) AUTHORIZATION.—Section 234(b) of the Energy  
16 Policy Act of 2005 (42 U.S.C. 15873(b)) is amended—

17 (1) by striking “Amounts” and inserting the  
18 following:

19 “(1) IN GENERAL.—Amounts”; and

20 (2) by adding at the end the following:

21 “(2) AUTHORIZATION.—Effective for fiscal year  
22 2019 and each fiscal year thereafter, amounts de-  
23 posited under subsection (a) shall be available to the  
24 Secretary of the Interior for expenditure, without  
25 further appropriation or fiscal year limitation, to im-

1       plement the Geothermal Steam Act of 1970 (30  
2       U.S.C. 1001 et seq.) and this Act.”.

3   **SEC. 2610. FACILITATION OF COPRODUCTION OF GEO-**  
4       **THERMAL ENERGY ON OIL AND GAS LEASES.**

5       Section 4(b) of the Geothermal Steam Act of 1970  
6   (30 U.S.C. 1003(b)) is amended by adding at the end the  
7   following:

8               “(4) LAND SUBJECT TO OIL AND GAS LEASE.—

9       Land under an oil and gas lease issued pursuant to  
10      the Mineral Leasing Act (30 U.S.C. 181 et seq.) or  
11      the Mineral Leasing Act for Acquired Lands (30  
12      U.S.C. 351 et seq.) that is subject to an approved  
13      application for permit to drill and from which oil  
14      and gas production is occurring may be available for  
15      noncompetitive leasing under subsection (c) by the  
16      holder of the oil and gas lease—

17              “(A) on a determination that geothermal  
18              energy will be produced from a well producing  
19              or capable of producing oil and gas; and

20              “(B) in order to provide for the coproduc-  
21              tion of geothermal energy with oil and gas.”.

1 **SEC. 2611. NONCOMPETITIVE LEASING OF ADJOINING**  
2 **AREAS FOR DEVELOPMENT OF GEOTHERMAL**  
3 **RESOURCES.**

4 Section 4(b) of the Geothermal Steam Act of 1970  
5 (30 U.S.C. 1003(b)) is further amended by adding at the  
6 end the following:

7 “(5) ADJOINING LAND.—

8 “(A) DEFINITIONS.—In this paragraph:

9 “(i) FAIR MARKET VALUE PER  
10 ACRE.—The term ‘fair market value per  
11 acre’ means a dollar amount per acre  
12 that—

13 “(I) except as provided in this  
14 clause, shall be equal to the market  
15 value per acre (taking into account  
16 the determination under subparagraph  
17 (B)(iii) regarding a valid discovery on  
18 the adjoining land) as determined by  
19 the Secretary under regulations issued  
20 under this paragraph;

21 “(II) shall be determined by the  
22 Secretary with respect to a lease  
23 under this paragraph, by not later  
24 than the end of the 180-day period  
25 beginning on the date the Secretary

1 receives an application for the lease;  
2 and

3 “(III) shall be not less than the  
4 greater of—

5 “(aa) 4 times the median  
6 amount paid per acre for all land  
7 leased under this Act during the  
8 preceding year; or

9 “(bb) \$50.

10 “(ii) INDUSTRY STANDARDS.—The  
11 term ‘industry standards’ means the stand-  
12 ards by which a qualified geothermal pro-  
13 fessional assesses whether downhole or  
14 flowing temperature measurements with  
15 indications of permeability are sufficient to  
16 produce energy from geothermal resources,  
17 as determined through flow or injection  
18 testing or measurement of lost circulation  
19 while drilling.

20 “(iii) QUALIFIED FEDERAL LAND.—  
21 The term ‘qualified Federal land’ means  
22 land that is otherwise available for leasing  
23 under this Act.

24 “(iv) QUALIFIED GEOTHERMAL PRO-  
25 FESSIONAL.—The term ‘qualified geo-



1 thermal professional’ means an individual  
2 who is an engineer or geoscientist in good  
3 professional standing with at least 5 years  
4 of experience in geothermal exploration,  
5 development, or project assessment.

6 “(v) QUALIFIED LESSEE.—The term  
7 ‘qualified lessee’ means a person who may  
8 hold a geothermal lease under this Act (in-  
9 cluding applicable regulations).

10 “(vi) VALID DISCOVERY.—The term  
11 ‘valid discovery’ means a discovery of a  
12 geothermal resource by a new or existing  
13 slim hole or production well, that exhibits  
14 downhole or flowing temperature measure-  
15 ments with indications of permeability that  
16 are sufficient to meet industry standards.

17 “(B) AUTHORITY.—An area of qualified  
18 Federal land that adjoins other land for which  
19 a qualified lessee holds a legal right to develop  
20 geothermal resources may be available for a  
21 noncompetitive lease under this section to the  
22 qualified lessee at the fair market value per  
23 acre, if—

24 “(i) the area of qualified Federal  
25 land—

1 “(I) consists of not less than 1  
2 acre and not more than 640 acres;  
3 and

4 “(II) is not already leased under  
5 this Act or nominated to be leased  
6 under subsection (a);

7 “(ii) the qualified lessee has not pre-  
8 viously received a noncompetitive lease  
9 under this paragraph in connection with  
10 the valid discovery for which data has been  
11 submitted under clause (iii)(I); and

12 “(iii) sufficient geological and other  
13 technical data prepared by a qualified geo-  
14 thermal professional has been submitted by  
15 the qualified lessee to the applicable Fed-  
16 eral land management agency that would  
17 lead individuals who are experienced in the  
18 subject matter to believe that—

19 “(I) there is a valid discovery of  
20 geothermal resources on the land for  
21 which the qualified lessee holds the  
22 legal right to develop geothermal re-  
23 sources; and

24 “(II) that geothermal feature ex-  
25 tends into the adjoining areas.

1                   “(C) DETERMINATION OF FAIR MARKET  
2                   VALUE.—

3                   “(i) IN GENERAL.—The Secretary  
4                   shall—

5                   “(I) publish a notice of any re-  
6                   quest to lease land under this para-  
7                   graph;

8                   “(II) determine fair market value  
9                   for purposes of this paragraph in ac-  
10                  cordance with procedures for making  
11                  those determinations that are estab-  
12                  lished by regulations issued by the  
13                  Secretary;

14                  “(III) provide to a qualified les-  
15                  see and publish, with an opportunity  
16                  for public comment for a period of 30  
17                  days, any proposed determination  
18                  under this subparagraph of the fair  
19                  market value of an area that the  
20                  qualified lessee seeks to lease under  
21                  this paragraph; and

22                  “(IV) provide to the qualified les-  
23                  see and any adversely affected party  
24                  the opportunity to appeal the final de-  
25                  termination of fair market value in an

1 administrative proceeding before the  
2 applicable Federal land management  
3 agency, in accordance with applicable  
4 law (including regulations).

5 “(ii) LIMITATION ON NOMINATION.—  
6 After publication of a notice of request to  
7 lease land under this paragraph, the Sec-  
8 retary may not accept under subsection (a)  
9 any nomination of the land for leasing un-  
10 less the request has been denied or with-  
11 drawn.

12 “(iii) ANNUAL RENTAL.—For pur-  
13 poses of section 5(a)(3), a lease awarded  
14 under this paragraph shall be considered a  
15 lease awarded in a competitive lease sale.

16 “(D) REGULATIONS.—Not later than 270  
17 days after the date of the enactment of this  
18 paragraph, the Secretary shall issue regulations  
19 to carry out this paragraph.”.

20 **SEC. 2612. SAVINGS CLAUSE.**

21 Notwithstanding any other provision of this subtitle,  
22 the Secretary shall continue to manage public lands under  
23 the principles of multiple use and sustained yield in ac-  
24 cordance with title I of the Federal Land Policy and Man-  
25 agement Act of 1976 (43 U.S.C. 1701 et seq.), including

1 due consideration of mineral and nonrenewable energy-re-  
2 lated projects and other nonrenewable energy uses, for the  
3 purposes of land use planning, permit processing, and con-  
4 ducting environmental reviews.

5 **TITLE III—CARBON POLLUTION**  
6 **REDUCTION TECHNOLOGIES**  
7 **Subtitle A—Fossil Energy Research**  
8 **and Development**

9 **SEC. 3101. DEFINITIONS.**

10 For purposes of this part:

11 (1) DEPARTMENT.—The term “Department”  
12 means the Department of Energy.

13 (2) SECRETARY.—The term “Secretary” means  
14 the Secretary of Energy.

15 **SEC. 3102. FOSSIL ENERGY OBJECTIVES.**

16 Section 961 of the Energy Policy Act of 2005 (42  
17 U.S.C. 16291) is amended—

18 (1) in subsection (a)—

19 (A) by striking paragraph (2) and insert-  
20 ing the following:

21 “(2) Decreasing the cost of emissions control  
22 technologies for fossil energy production, generation,  
23 and delivery.”;

24 (B) by striking paragraph (7) and insert-  
25 ing the following:

1 “(7) Increasing the export of emissions control  
2 technologies from the United States for fossil en-  
3 ergy-related equipment, technology, and services.”;  
4 and

5 (C) by adding at the end the following:

6 “(8) Improving the conversion, use, and storage  
7 of carbon oxides.

8 “(9) Lowering greenhouse gas emissions for all  
9 fossil fuel production, generation, delivery, and utili-  
10 zation, to the maximum extent possible.

11 “(10) Preventing, predicting, monitoring, and  
12 mitigating the unintended leaking of methane, car-  
13 bon dioxide, or other fossil fuel-related emissions  
14 into the atmosphere.

15 “(11) Improving the separation and purification  
16 of helium from fossil fuel resources.

17 “(12) Reducing water use, improving water  
18 reuse, and minimizing the surface and subsurface  
19 environmental impact in the development of uncon-  
20 ventional domestic oil and natural gas resources.

21 “(13) Developing carbon removal and utiliza-  
22 tion technologies, products, and methods that result  
23 in net reductions in greenhouse gas emissions, in-  
24 cluding direct air capture and storage and carbon  
25 use and reuse for commercial application.”;

1           (2) by striking subsections (c) through (e) and  
2           inserting the following:

3           “(c) **PRIORITIZATION.**—In carrying out this section,  
4           the Secretary shall prioritize technologies and strategies  
5           that have the potential to meet emissions reduction goals  
6           in the agreement of the twenty-first session of the Con-  
7           ference of the Parties to the United Nations Framework  
8           Convention on Climate Change.

9           “(d) **LIMITATION.**—None of the funds authorized  
10          under this section may be used for Fossil Energy Environ-  
11          mental Restoration or Import/Export Authorization.”.

12   **SEC. 3103. CARBON CAPTURE TECHNOLOGIES.**

13          (a) **CARBON CAPTURE PROGRAM.**—Section 962 of  
14          the Energy Policy Act of 2005 (42 U.S.C. 16292) is  
15          amended to read as follows:

16   **“SEC. 962. CARBON CAPTURE TECHNOLOGIES.**

17          “(a) **IN GENERAL.**—The Secretary shall conduct a  
18          program of research, development, demonstration, and  
19          commercial application of carbon capture technologies,  
20          which shall include facilitation of the development and use  
21          of—

22                 “(1) carbon capture technologies for coal and  
23                 natural gas;

24                 “(2) innovations to significantly decrease emis-  
25                 sions at existing power plants;

1           “(3) innovations to significantly decrease emis-  
2           sions in manufacturing and industrial applications;  
3           and

4           “(4) advanced separation technologies.

5           “(b) INVESTMENT.—As a part of the program under  
6           subsection (a), the Secretary shall maintain robust invest-  
7           ments in carbon capture technologies for coal and natural  
8           gas applications.

9           “(c) LARGE-SCALE PILOTS.—In carrying out this  
10          section, the Secretary is encouraged to support pilot  
11          projects that test carbon capture technologies on coal and  
12          natural gas power and industrial systems below the 100  
13          megawatt scale, consistent with section 988(b).

14          “(d) COST AND PERFORMANCE GOALS.—In carrying  
15          out the program under subsection (a), the Secretary shall  
16          establish cost and performance goals to assist in the tran-  
17          sition of carbon capture research to commercially viable  
18          technologies.

19          “(e) CARBON CAPTURE PILOT TEST CENTERS.—

20                 “(1) IN GENERAL.—As a part of the program  
21                 under subsection (a), not later than 1 year after the  
22                 date of the enactment of this section, the Secretary  
23                 shall award grants to eligible entities for the oper-  
24                 ation of not less than three Carbon Capture Test  
25                 Centers (in this subsection, known as the ‘Centers’)



1 to provide unique testing capabilities for innovative  
2 carbon capture technologies for power and industrial  
3 systems.

4 “(2) PURPOSE.—Each Center shall—

5 “(A) advance research, development, dem-  
6 onstration, and commercial application of car-  
7 bon capture technologies for power and indus-  
8 trial systems; and

9 “(B) test technologies that represent the  
10 scale of technology development beyond labora-  
11 tory testing, but not yet advanced to testing  
12 under operational conditions at commercial  
13 scale.

14 “(3) APPLICATION.—An entity seeking to oper-  
15 ate a Center under this subsection shall submit to  
16 the Secretary an application at such time and in  
17 such manner as the Secretary may require.

18 “(4) PRIORITY CRITERIA.—In selecting applica-  
19 tions to operate a Center under this subsection, the  
20 Secretary shall prioritize applicants that—

21 “(A) have access to existing or planned re-  
22 search facilities with modular technology capa-  
23 bilities;

24 “(B) are institutions of higher education  
25 with established expertise in engineering and

1 design for carbon capture technologies, or part-  
2 nerships with such institutions;

3 “(C) have access to existing research and  
4 test facilities for pre-combustion, post-combus-  
5 tion, or oxy-combustion technologies; or

6 “(D) have test capabilities to address scal-  
7 ing challenges of integrating carbon capture  
8 technologies with utility scale power plants.

9 “(5) CONSIDERATIONS.—In awarding grants  
10 for the operation of the Centers under this sub-  
11 section, the Secretary shall ensure that—

12 “(A) the portfolio of Centers includes a di-  
13 verse representation of regional and resource  
14 characteristics; and

15 “(B) each new Center demonstrates unique  
16 research capabilities, unique regional benefits,  
17 or new technology development opportunities.

18 “(6) SCHEDULE.—Each grant to operate a  
19 Center under this subsection shall be awarded for a  
20 term of not more than 5 years, subject to the avail-  
21 ability of appropriations. The Secretary may renew  
22 such 5-year term without limit, subject to a rigorous  
23 merit review.

24 “(7) TERMINATION.—To the extent otherwise  
25 authorized by law, the Secretary may eliminate a

1 Center during any 5-year term described in para-  
2 graph (6) if such Center is underperforming.

3 “(f) DEMONSTRATIONS.—

4 “(1) IN GENERAL.—As a part of the program  
5 under subsection (a), the Secretary may provide  
6 grants for large-scale demonstration projects for  
7 power and industrial systems that test the scale of  
8 technology necessary to gain the operational data  
9 needed to understand the technical and performance  
10 risks of the technology before the application of the  
11 technology at commercial scale, in accordance with  
12 this subsection.

13 “(2) ENGINEERING AND DESIGN STUDIES.—  
14 The Secretary is authorized to fund front-end engi-  
15 neering and design studies in addition to, or in ad-  
16 vance of, issuing an award for a demonstration  
17 project under this subsection.

18 “(3) APPLICATION.—An entity seeking an  
19 award to conduct a demonstration project under this  
20 subsection shall submit to the Secretary an applica-  
21 tion at such time and in such manner as the Sec-  
22 retary may require.

23 “(4) LIMITATIONS.—The Secretary shall only  
24 provide an award under this subsection after review-  
25 ing each applicant and application regarding—

1 “(A) financial strength;

2 “(B) construction schedule;

3 “(C) market risk; and

4 “(D) contractor history.

5 “(5) REQUIREMENTS.—A demonstration project  
6 funded under this subsection shall—

7 “(A) utilize technologies that have com-  
8 pleted pilot-scale testing or the equivalent, as  
9 determined by the Secretary;

10 “(B) secure and maintain agreements for  
11 the utilization or sequestration of captured car-  
12 bon dioxide; and

13 “(C) upon completion, demonstrate carbon  
14 capture technologies on a power or industrial  
15 system capable of capturing not less than  
16 100,000 tons of carbon dioxide annually.

17 “(g) DEFINITION OF POWER SYSTEM.—In this sec-  
18 tion, the term ‘power system’ means any electricity gener-  
19 ating unit that utilizes fossil fuels to generate electricity  
20 provided to the electric grid or directly to a consumer.

21 “(h) AUTHORIZATION OF APPROPRIATIONS.—There  
22 are authorized to be appropriated to the Secretary for ac-  
23 tivities under this section—

24 “(1) \$300,000,000 for fiscal year 2021;

25 “(2) \$315,000,000 for fiscal year 2022;

1 “(3) \$330,750,000 for fiscal year 2023;

2 “(4) \$347,288,000 for fiscal year 2024; and

3 “(5) \$364,652,000 for fiscal year 2025.

4 “(i) COMMERCIAL DEMONSTRATION.—

5 “(1) IN GENERAL.—The Secretary shall estab-  
6 lish a carbon capture technology commercialization  
7 program to improve the efficiency, effectiveness,  
8 cost, and environmental performance of such tech-  
9 nologies for power, industrial, transportation, and  
10 other commercial applications. Such program shall  
11 include funding for commercial carbon capture tech-  
12 nology projects for up to five demonstrations of a  
13 particular technology type.

14 “(2) AUTHORIZATION OF APPROPRIATIONS.—

15 There are authorized to be appropriated to carry out  
16 this subsection \$1,500,000,000 for each of fiscal  
17 years 2021 through 2025.”.

18 (b) GAO STUDY.—

19 (1) IN GENERAL.—Not later than 1 year after  
20 the date of enactment of this Act, the Comptroller  
21 General of the United States shall submit to the  
22 Committee on Science, Space, and Technology of the  
23 House of Representatives and the Committee on En-  
24 ergy and Natural Resources of the Senate a report  
25 on the results of a study of the Department’s suc-

1       cesses, failures, practices, and improvements in car-  
2       rying out demonstration projects for carbon capture  
3       technologies for power and industrial systems. In  
4       conducting the study, the Comptroller General shall  
5       consider—

6               (A) applicant and contractor qualifications;

7               (B) project management practices at the  
8       Department;

9               (C) economic or market changes and other  
10       factors impacting project viability;

11              (D) completion of third-party agreements,  
12       including power purchase agreements and car-  
13       bon dioxide offtake agreements;

14              (E) regulatory challenges; and

15              (F) construction challenges.

16       (2) CONSIDERATION.—The Secretary shall con-  
17       sider any relevant recommendations, as determined  
18       by the Secretary, provided in the report required  
19       under paragraph (1), and shall adopt such rec-  
20       ommendations as the Secretary considers appro-  
21       priate.

22       (3) POWER SYSTEM DEFINED.—In this section,  
23       the term “power system” means any electricity gen-  
24       erating unit that utilizes fossil fuels to generate elec-

1       tricity provided to the electric grid or directly to a  
2       consumer.

3   **SEC. 3104. NATURAL GAS CARBON CAPTURE RESEARCH,**  
4                   **DEVELOPMENT, AND DEMONSTRATION PRO-**  
5                   **GRAM.**

6       (a) IN GENERAL.—Subtitle F of title IX of the En-  
7   ergy Policy Act of 2005 (42 U.S.C. 16291 et seq.) is  
8   amended by adding at the end the following:

9   **“SEC. 969. NATURAL GAS CARBON CAPTURE RESEARCH,**  
10                   **DEVELOPMENT, AND DEMONSTRATION PRO-**  
11                   **GRAM.**

12       “(a) DEFINITIONS.—In this section:

13               “(1) NATURAL GAS.—The term ‘natural gas’  
14       includes any fuel consisting in whole or in part of—

15                   “(A) natural gas;

16                   “(B) liquid petroleum gas;

17                   “(C) synthetic gas derived from petroleum  
18       or natural gas liquids; or

19                   “(D) any mixture of natural gas and syn-  
20       thetic gas.

21               “(2) QUALIFYING ELECTRIC GENERATION FA-  
22       CILITY.—The term ‘qualifying electric generation fa-  
23       cility’ means a facility that generates electric energy  
24       through the use of natural gas or a facility that gen-  
25       erates hydrogen from natural gas.

1           “(3) QUALIFYING TECHNOLOGY.—The term  
2           ‘qualifying technology’ means any technology to cap-  
3           ture carbon dioxide produced during the generation  
4           of electricity from natural gas power systems or dur-  
5           ing the generation of hydrogen from natural gas.

6           “(b) ESTABLISHMENT OF RESEARCH, DEVELOP-  
7           MENT, AND DEMONSTRATION PROGRAM.—

8           “(1) IN GENERAL.—The Secretary shall estab-  
9           lish a program under which the Secretary shall,  
10          through a competitive, merit-reviewed process, award  
11          grants to eligible entities to conduct research, devel-  
12          opment, and demonstration of qualifying tech-  
13          nologies.

14          “(2) OBJECTIVES.—The objectives of the pro-  
15          gram established under paragraph (1) shall be—

16                 “(A) to conduct research to accelerate the  
17                 development of qualifying technologies to reduce  
18                 the quantity of carbon dioxide emissions re-  
19                 leased from qualifying electric generation facili-  
20                 ties, including—

21                         “(i) pre- and post-combustion capture  
22                         technologies; and

23                         “(ii) technologies to improve the ther-  
24                         modynamics, kinetics, scalability, dura-  
25                         bility, and flexibility of carbon capture



1 technologies for use during the generation  
2 of electricity from natural gas power sys-  
3 tems;

4 “(B) to expedite and carry out demonstra-  
5 tion projects (including pilot projects) for quali-  
6 fying technologies in partnership with quali-  
7 fying electric generation facilities in order to  
8 demonstrate the technical feasibility and eco-  
9 nomic potential for commercial deployment of  
10 technologies developed pursuant to subpara-  
11 graph (A); and

12 “(C) to identify any barriers to the com-  
13 mercial deployment of any qualifying tech-  
14 nologies under development pursuant to re-  
15 search conducted pursuant to subparagraph  
16 (A).

17 “(3) ELIGIBLE ENTITIES.— An entity eligible  
18 to receive a grant under this subsection is—

19 “(A) a National Laboratory;

20 “(B) an institution of higher education;

21 “(C) a research facility;

22 “(D) a multi-institutional collaboration; or

23 “(E) another appropriate entity or com-  
24 bination of any of the entities specified in sub-  
25 paragraphs (A) through (D).

1       “(c) CARBON CAPTURE FACILITIES DEMONSTRATION  
2 PROGRAM.—

3           “(1) ESTABLISHMENT.—As part of the pro-  
4 gram established under paragraph (1), the Secretary  
5 shall establish a demonstration program under which  
6 the Secretary shall, through a competitive, merit-re-  
7 viewed process, enter into cooperative agreements  
8 with entities that submit applications pursuant to  
9 paragraph (4) for demonstration or pilot projects to  
10 construct and operate, by not later than September  
11 30, 2025, up to five facilities to capture carbon diox-  
12 ide from qualifying electric generation facilities. The  
13 Secretary shall, to the maximum extent practicable,  
14 provide technical assistance to any entity seeking to  
15 enter into such a cooperative agreement in obtaining  
16 any necessary permits and licenses to demonstrate  
17 qualifying technologies.

18           “(2) COOPERATIVE AGREEMENTS.—The Sec-  
19 retary may enter into a cooperative agreement under  
20 this subsection with industry stakeholders, including  
21 any such industry stakeholder operating in partner-  
22 ship with National Laboratories, institutions of high-  
23 er education, multi-institutional collaborations, and  
24 other appropriate entities.

1           “(3) GOALS.—Each demonstration or pilot  
2           project carried out pursuant to the demonstration  
3           program under this subsection shall—

4                   “(A) be designed to further the develop-  
5                   ment of qualifying technologies that may be  
6                   used by a qualifying electric generation facility;

7                   “(B) be financed in part by the private  
8                   sector;

9                   “(C) if necessary, secure agreements for  
10                  the offtake of carbon dioxide emissions captured  
11                  by qualifying technologies during the project;  
12                  and

13                  “(D) support energy production in the  
14                  United States.

15           “(4) REQUEST FOR APPLICATIONS.—Not later  
16           than 120 days after the date of enactment of this  
17           Act, the Secretary shall solicit applications for coop-  
18           erative agreements for projects—

19                   “(A) to demonstrate qualifying tech-  
20                   nologies at up to five qualifying electric genera-  
21                   tion facilities; and

22                   “(B) to construct and operate three or  
23                   more facilities to capture carbon dioxide from a  
24                   qualifying electric generation facility.

1           “(5) REVIEW OF APPLICATIONS.—In consid-  
2           ering applications submitted under paragraph (4),  
3           the Secretary, to the maximum extent practicable,  
4           shall—

5                   “(A) ensure a broad geographic distribu-  
6                   tion of project sites;

7                   “(B) ensure that a broad selection of  
8                   qualifying electric generation facilities are rep-  
9                   resented;

10                  “(C) ensure that a broad selection of quali-  
11                  fying technologies are represented;

12                  “(D) require information and knowledge  
13                  gained by each participant in the demonstration  
14                  program to be transferred and shared among  
15                  all participants in the demonstration program;  
16                  and

17                  “(E) leverage existing—

18                          “(i) public-private partnerships; and

19                          “(ii) Federal resources.

20           “(d) COST SHARING.—In carrying out this section,  
21           the Secretary shall require cost sharing in accordance with  
22           section 988.

23           “(e) REPORT.—Not later than 180 days after the  
24           date on which the Secretary solicits applications under  
25           subsection (c)(3), and annually thereafter, the Secretary

1 shall submit to the appropriate committees of jurisdiction  
2 of the Senate and the House of Representatives a report  
3 that includes—

4 “(1) a detailed description of how applications  
5 for cooperative agreements under subsection (b) will  
6 be solicited and evaluated, including—

7 “(A) a list of any activities carried out by  
8 the Secretary to solicit or evaluate applications;  
9 and

10 “(B) a process for ensuring that any  
11 projects carried out under a cooperative agree-  
12 ment are designed to result in the development  
13 or demonstration of qualifying technologies;

14 “(2)(A) in the case of the first report under  
15 this subsection, a detailed list of technical milestones  
16 for the development and demonstration of each  
17 qualifying technology pursued under subsection (b);  
18 and

19 “(B) in the case of each subsequent report  
20 under this subsection, the progress made towards  
21 achieving such technical milestones during the pe-  
22 riod covered by the report; and

23 “(3) with respect to the demonstration program  
24 established under subsection (c), includes—

1           “(A) an estimate of the cost of licensing,  
2           permitting, constructing, and operating each  
3           carbon capture facility expected to be con-  
4           structed under that demonstration program;

5           “(B) a schedule for the planned construc-  
6           tion and operation of each demonstration or  
7           pilot project; and

8           “(C) an estimate of any financial assist-  
9           ance, compensation, or incentives proposed to  
10          be paid by the host State, Indian Tribe, or local  
11          government with respect to each facility.

12          “(f) FUNDING.—For each of fiscal years 2021  
13 through 2025, out of any amounts appropriated to the De-  
14 partment to carry out fossil energy research and develop-  
15 ment activities and not otherwise obligated, the Secretary  
16 may use to carry out this section not more than  
17 \$50,000,000.”.

18          (b) CLERICAL AMENDMENT.—The table of contents  
19 for the Energy Policy Act of 2005 (Public Law 109–58;  
20 119 Stat. 600) is amended by inserting after the item re-  
21 lating to section 968 the following:

“Sec. 969. Natural gas carbon capture research, development, and demonstra-  
tion program.”.

22 **SEC. 3105. CARBON STORAGE VALIDATION AND TESTING.**

23          Section 963 of the Energy Policy Act of 2005 (42  
24 U.S.C. 16293) is amended to read as follows:

1 **“SEC. 963. CARBON STORAGE VALIDATION AND TESTING.**

2 “(a) CARBON STORAGE.—The Secretary, in consulta-  
3 tion with the Administrator of the Environmental Protec-  
4 tion Agency, shall carry out a program of research, devel-  
5 opment, and demonstration for carbon storage. The pro-  
6 gram shall—

7 “(1) in coordination with relevant Federal agen-  
8 cies, develop and maintain mapping tools and re-  
9 sources that assess the capacity of geologic storage  
10 formations in the United States;

11 “(2) develop monitoring tools, modeling of geo-  
12 logic formations, and analyses to predict and verify  
13 carbon dioxide containment and account for seques-  
14 tered carbon dioxide in geologic storage sites;

15 “(3) research potential environmental, safety,  
16 and health impacts in the event of a leak to the at-  
17 mosphere or to an aquifer, and any corresponding  
18 mitigation actions or responses to limit harmful con-  
19 sequences;

20 “(4) evaluate the interactions of carbon dioxide  
21 with formation solids and fluids, including the pro-  
22 pensity of injections to induce seismic activity;

23 “(5) assess and ensure the safety of operations  
24 related to geologic sequestration of carbon dioxide;

1           “(6) determine the fate of carbon dioxide con-  
2           current with and following injection into geologic  
3           formations;

4           “(7) support cost and business model assess-  
5           ments to examine the economic viability of tech-  
6           nologies and systems developed under this program;  
7           and

8           “(8) provide information to State, local, and  
9           Tribal governments, the Environmental Protection  
10          Agency, and other appropriate entities, to support  
11          development of a regulatory framework for commer-  
12          cial-scale sequestration operations that ensure the  
13          protection of human health and the environment.

14          “(b) GEOLOGIC SETTINGS.—In carrying out research  
15          activities under this section, the Secretary shall consider  
16          a variety of candidate geologic settings, both onshore and  
17          offshore, including—

18               “(1) operating oil and gas fields;

19               “(2) depleted oil and gas fields;

20               “(3) residual oil zones;

21               “(4) unconventional reservoirs and rock types;

22               “(5) unmineable coal seams;

23               “(6) saline formations in both sedimentary and  
24          basaltic geologies;



1 “(7) geologic systems that may be used as engi-  
2 neered reservoirs to extract economical quantities of  
3 brine from geothermal resources of low permeability  
4 or porosity; and

5 “(8) geologic systems containing in situ carbon  
6 dioxide mineralization formations.

7 “(c) REGIONAL CARBON SEQUESTRATION PARTNER-  
8 SHIPS.—

9 “(1) IN GENERAL.—The Secretary shall carry  
10 out large-scale carbon sequestration demonstrations  
11 for geologic containment of carbon dioxide to collect  
12 and validate information on the cost and feasibility  
13 of commercial deployment of technologies for the  
14 geologic containment of carbon dioxide. The Sec-  
15 retary may fund new demonstrations or expand the  
16 work completed at one or more of the existing re-  
17 gional carbon sequestration partnerships.

18 “(2) DEMONSTRATION COMPONENTS.—Each  
19 demonstration described in paragraph (1) shall in-  
20 clude longitudinal tests involving carbon dioxide in-  
21 jection and monitoring, mitigation, and verification  
22 operations.

23 “(3) CLEARINGHOUSE.—The National Energy  
24 Technology Laboratory shall act as a clearinghouse  
25 of shared information and resources for the regional

1 carbon sequestration partnerships and any new dem-  
2 onstrations funded under this section.

3 “(4) REPORT.—Not later than 1 year after the  
4 date of enactment of this section, the Secretary shall  
5 provide to the Committee on Science, Space, and  
6 Technology of the House of Representatives and the  
7 Committee on Energy and Natural Resources of the  
8 Senate a report that—

9 “(A) assesses the progress of all regional  
10 carbon sequestration partnerships;

11 “(B) identifies the remaining challenges in  
12 achieving carbon sequestration that is reliable  
13 and safe for the environment and public health;  
14 and

15 “(C) creates a roadmap for Department of  
16 Energy carbon storage research and develop-  
17 ment activities through 2030 with the goal of  
18 reducing economic and policy barriers to com-  
19 mercial carbon sequestration.

20 “(5) LARGE-SCALE CARBON SEQUESTRATION.—  
21 For purposes of this subsection, ‘large-scale carbon  
22 sequestration’ means a scale that demonstrates the  
23 ability to inject and sequester several million metric  
24 tons carbon dioxide for at least 10 years.

1       “(d) INTEGRATED STORAGE PROJECTS.—The Sec-  
2 retary may carry out a program for the purpose of  
3 transitioning the large-scale carbon sequestration dem-  
4 onstration projects under subsection (c) into integrated,  
5 commercial storage complexes. The program shall focus  
6 on—

7           “(1) qualifying geologic storage sites in order to  
8 accept large volumes of carbon dioxide acceptable for  
9 commercial contracts;

10          “(2) understanding the technical and commer-  
11 cial viability of storage sites;

12          “(3) developing the qualification processes that  
13 will be necessary for a diverse range of geologic stor-  
14 age sites to commercially accept carbon dioxide; and

15          “(4) any other activities the Secretary deter-  
16 mines necessary to transition the large scale dem-  
17 onstration storage projects into commercial ventures.

18       “(e) COST SHARING.—The Secretary shall require  
19 cost sharing under this section in accordance with section  
20 988.

21       “(f) AUTHORIZATION OF APPROPRIATIONS.—There  
22 are authorized to be appropriated to the Secretary for ac-  
23 tivities under this section—

24           “(1) \$620,000,000 for fiscal year 2021;

25           “(2) \$626,000,000 for fiscal year 2022;

1 “(3) \$632,300,000 for fiscal year 2023;  
2 “(4) \$638,915,000 for fiscal year 2024; and  
3 “(5) \$645,860,750 for fiscal year 2025.”.

4 **SEC. 3106. CARBON UTILIZATION.**

5 (a) PROGRAM.—Subtitle F of title IX of the Energy  
6 Policy Act of 2005 (42 U.S.C. 16291 et seq.), as amended  
7 by this Act, is amended by adding at the end the following:

8 **“SEC. 970. CARBON UTILIZATION.**

9 “(a) IN GENERAL.—The Secretary shall carry out a  
10 program of research, development, and demonstration for  
11 carbon utilization. The program shall—

12 “(1) assess and monitor potential changes in  
13 life cycle carbon dioxide and other greenhouse gas  
14 emissions, and other environmental safety indicators  
15 of new technologies, practices, processes, or meth-  
16 ods, used in enhanced hydrocarbon recovery as part  
17 of the activities authorized in section 963 of the En-  
18 ergy Policy Act of 2005 (42 U.S.C. 16293);

19 “(2) identify and evaluate novel uses for car-  
20 bon, including the conversion of carbon oxides, in a  
21 manner that, on a full life-cycle basis, achieves a  
22 permanent reduction in, or avoidance of a net in-  
23 crease in carbon dioxide in the atmosphere, for use  
24 in commercial and industrial products, such as—

25 “(A) chemicals;

1 “(B) plastics;

2 “(C) building materials;

3 “(D) fuels;

4 “(E) cement;

5 “(F) products of coal utilization in power

6 systems (as such term is defined in section

7 962(e)), or other applications; or

8 “(G) other products with demonstrated

9 market value;

10 “(3) carbon capture technologies for industrial

11 systems;

12 “(4) identify and assess alternative uses for

13 coal that result in no net emissions of carbon dioxide

14 or other pollutants, including products derived from

15 carbon engineering, carbon fiber, and coal conversion

16 methods.

17 “(b) AUTHORIZATION OF APPROPRIATIONS.—There

18 are authorized to be appropriated to the Secretary for ac-

19 tivities under this section—

20 “(1) \$30,000,000 for fiscal year 2021;

21 “(2) \$31,500,000 for fiscal year 2022;

22 “(3) \$33,075,000 for fiscal year 2023;

23 “(4) \$34,729,000 for fiscal year 2024; and

24 “(5) \$36,465,000 for fiscal year 2025.”.

1 (b) STUDY.—The Secretary shall enter into an agree-  
2 ment with the National Academies to conduct a study as-  
3 sessing the barriers, and opportunities related to the com-  
4 mercial application of carbon dioxide in the United States.  
5 Such study shall—

6 (1) analyze the technical feasibility, related  
7 challenges, and impacts to commercializing carbon  
8 dioxide, including—

9 (A) creating a national system of carbon  
10 dioxide pipelines and geologic sequestration  
11 sites;

12 (B) mitigating environmental and land-  
13 owner impacts; and

14 (C) regional economic challenges and op-  
15 portunities;

16 (2) identify potential markets, industries, or  
17 sectors that may benefit from greater access to com-  
18 mercial carbon dioxide;

19 (3) assess the current state of infrastructure  
20 and any necessary updates to allow for the integra-  
21 tion of safe and reliable carbon dioxide transpor-  
22 tation, utilization, and storage;

23 (4) estimate the economic, climate, and environ-  
24 mental impacts of any well-integrated national car-  
25 bon dioxide pipeline system, including suggestions

1 for policies that could improve the economic impact  
2 of the system;

3 (5) assess the global status and progress of car-  
4 bon utilization technologies (both chemical and bio-  
5 logical) in practice today that utilize waste carbon  
6 (including carbon dioxide, carbon monoxide, meth-  
7 ane, and biogas) from power generation, biofuels  
8 production, and other industrial processes that may  
9 be important to minimizing net greenhouse gas  
10 emissions;

11 (6) identify emerging technologies and ap-  
12 proaches for carbon utilization that show promise  
13 for scale-up, demonstration, deployment, and com-  
14 mercialization relevant to minimizing net greenhouse  
15 gas emissions;

16 (7) analyze the factors associated with making  
17 carbon utilization technologies that may be impor-  
18 tant to minimizing net greenhouse gas emissions via-  
19 ble at a commercial scale, including carbon waste  
20 stream availability, economics, market capacity, en-  
21 ergy and lifecycle requirements;

22 (8) assess the major technical challenges associ-  
23 ated with increasing the commercial viability of car-  
24 bon reuse technologies, and identify the research and

1 development questions that will address those chal-  
2 lenges;

3 (9) assess current research efforts, including  
4 engineering and computational, that are addressing  
5 these challenges and identify gaps in the current re-  
6 search portfolio; and

7 (10) develop a comprehensive research agenda  
8 that addresses both long- and short-term research  
9 needs and opportunities for technologies that may be  
10 important to minimizing net greenhouse gas emis-  
11 sions.

12 **SEC. 3107. ADVANCED ENERGY SYSTEMS.**

13 Subtitle F of title IX of the Energy Policy Act of  
14 2005 (42 U.S.C. 16291 et seq.), as amended by this Act,  
15 is further amended by adding at the end the following:

16 **“SEC. 970A. ADVANCED ENERGY SYSTEMS.**

17 “(a) IN GENERAL.—The Secretary shall conduct a  
18 program, with the purpose of reducing emissions from fos-  
19 sil fuel power generation by not less than 50 percent, of  
20 research, development, demonstration, and commercial ap-  
21 plication with respect to the following:

22 “(1) High-efficiency turbines in accordance with  
23 the program under section 970A–1.



1           “(2) Supercritical and ultrasupercritical carbon  
2           dioxide, with an emphasis on developing directly-  
3           fired and indirectly fired cycles in the next 10 years.

4           “(3) Advanced combustion systems, including  
5           oxy-combustion systems and chemical looping.

6           “(4) Fuel cell technologies for low-cost, high-ef-  
7           ficiency, fuel-flexible, modular power systems, includ-  
8           ing solid oxide fuel cell technology for commercial,  
9           residential, and distributed generation systems,  
10          using improved manufacturing production and proc-  
11          esses.

12          “(5) Gasification systems to enable carbon cap-  
13          ture, improve efficiency, and reduce capital and op-  
14          erating costs.

15          “(6) Thermal cycling with ramping or rapid  
16          black start capabilities that do not compromise effi-  
17          ciency or environmental performance.

18          “(7) Small-scale and modular coal-fired tech-  
19          nologies with reduced carbon outputs or carbon cap-  
20          ture that can support incremental power generation  
21          capacity additions.

22          “(b) PRIORITY.—In carrying out the program under  
23          subsection (a), the Secretary is encouraged to prioritize  
24          transformational technologies that enable a step change

1 in reduction of emissions as compared to the technology  
2 in existence on the date of enactment of this section.

3 “(c) AUTHORIZATION OF APPROPRIATIONS.—There  
4 are authorized to be appropriated to the Secretary for ac-  
5 tivities under this section and section 970A–1—

6 “(1) \$150,000,000 for fiscal year 2021;

7 “(2) \$157,500,000 for fiscal year 2022;

8 “(3) \$165,375,000 for fiscal year 2023;

9 “(4) \$173,643,750 for fiscal year 2024; and

10 “(5) \$182,325,938 for fiscal year 2025.

11 **“SEC. 970A–1. HIGH EFFICIENCY GAS TURBINES.**

12 “(a) IN GENERAL.—The Secretary of Energy,  
13 through the Office of Fossil Energy, shall carry out a  
14 multiyear, multiphase program of research, development,  
15 and technology demonstration to improve the efficiency of  
16 gas turbines used in power generation systems and to  
17 identify the technologies that ultimately will lead to gas  
18 turbine combined cycle efficiency of 67 percent or simple  
19 cycle efficiency of 50 percent.

20 “(b) PROGRAM ELEMENTS.—The program under this  
21 section shall—

22 “(1) support first-of-a-kind engineering and de-  
23 tailed gas turbine design for megawatt-scale and  
24 utility-scale electric power generation, including—

1           “(A) high temperature materials, including  
2           superalloys, coatings, and ceramics;

3           “(B) improved heat transfer capability;

4           “(C) manufacturing technology required to  
5           construct complex three-dimensional geometry  
6           parts with improved aerodynamic capability;

7           “(D) combustion technology to produce  
8           higher firing temperature while lowering nitro-  
9           gen oxide and carbon monoxide emissions per  
10          unit of output;

11          “(E) advanced controls and systems inte-  
12          gration;

13          “(F) advanced high performance com-  
14          pressor technology; and

15          “(G) validation facilities for the testing of  
16          components and subsystems;

17          “(2) include technology demonstration through  
18          component testing, subscale testing, and full-scale  
19          testing in existing fleets;

20          “(3) include field demonstrations of the devel-  
21          oped technology elements so as to demonstrate tech-  
22          nical and economic feasibility; and

23          “(4) assess overall combined cycle and simple  
24          cycle system performance.

1       “(c) PROGRAM GOALS.—The goals of the multiphase  
2 program established under subsection (a) shall be—

3               “(1) in phase I—

4                       “(A) to develop the conceptual design of  
5 advanced high efficiency gas turbines that can  
6 achieve at least 65-percent combined cycle effi-  
7 ciency or 47-percent simple cycle efficiency on  
8 a lower heating value basis; and

9                       “(B) to develop and demonstrate the tech-  
10 nology required for advanced high efficiency gas  
11 turbines that can achieve at least 65-percent  
12 combined cycle efficiency or 47-percent simple  
13 cycle efficiency on a lower heating value basis;  
14 and

15               “(2) in phase II, to develop the conceptual de-  
16 sign for advanced high efficiency gas turbines that  
17 can achieve at least 67-percent combined cycle effi-  
18 ciency or 50-percent simple cycle efficiency on a  
19 lower heating value basis.

20       “(d) PROPOSALS.—Not later than 180 days after the  
21 date of enactment of this section, the Secretary shall so-  
22 licit grant and contract proposals from industry, small  
23 businesses, universities, and other appropriate parties for  
24 conducting activities under this Act. In selecting pro-  
25 posals, the Secretary shall emphasize—

1 “(1) the extent to which the proposal will stim-  
2 ulate the creation or increased retention of jobs in  
3 the United States; and

4 “(2) the extent to which the proposal will pro-  
5 mote and enhance United States technology leader-  
6 ship.

7 “(e) COMPETITIVE AWARDS.—The provision of fund-  
8 ing under this section shall be on a competitive basis with  
9 an emphasis on technical merit.

10 “(f) COST SHARING.—Section 988 of the Energy Pol-  
11 icy Act of 2005 (42 U.S.C. 16352) shall apply to an award  
12 of financial assistance made under this section.

13 “(g) LIMITS ON PARTICIPATION.—The limits on par-  
14 ticipation applicable under section 999E of the Energy  
15 Policy Act of 2005 (42 U.S.C. 16375) shall apply to finan-  
16 cial assistance awarded under this section.”.

17 **SEC. 3108. RARE EARTH ELEMENTS.**

18 Subtitle F of title IX of the Energy Policy Act of  
19 2005 (42 U.S.C. 16291 et seq.) is further amended by  
20 adding at the end the following:

21 **“SEC. 970B. RARE EARTH ELEMENTS.**

22 “(a) IN GENERAL.—In coordination with the relevant  
23 Federal agencies, the Secretary shall conduct research to  
24 develop and assess methods to separate and recover rare  
25 earth elements and other strategic minerals and coprod-

1 ucts from coal and coal byproduct streams. The program  
2 shall—

3 “(1) develop advanced rare earth element sepa-  
4 ration and extraction processes using coal-based re-  
5 sources as feedstock materials;

6 “(2) assess the technical and economic feasi-  
7 bility of recovering rare earth elements from coal-  
8 based resources and validate such feasibility with  
9 prototype systems producing salable, high-purity  
10 rare earth elements from coal-based resources; and

11 “(3) assess and mitigate any environmental and  
12 public health impacts of recovering rare earth ele-  
13 ments from coal-based resources.

14 “(b) AUTHORIZATION OF APPROPRIATIONS.—There  
15 are authorized to be appropriated to the Secretary for ac-  
16 tivities under this section—

17 “(1) \$23,000,000 for fiscal year 2021;

18 “(2) \$24,150,000 for fiscal year 2022;

19 “(3) \$25,357,500 for fiscal year 2023;

20 “(4) \$26,625,375 for fiscal year 2024; and

21 “(5) \$27,956,644 for fiscal year 2025.”.

22 **SEC. 3109. METHANE HYDRATE RESEARCH AMENDMENTS.**

23 (a) IN GENERAL.—Section 4(b) of the Methane Hy-  
24 drate Research and Development Act of 2000 (30 U.S.C.  
25 2003(b)) is amended to read as follows:

1       “(b) GRANTS, CONTRACTS, COOPERATIVE AGREE-  
2 MENTS, INTERAGENCY FUNDS TRANSFER AGREEMENTS,  
3 AND FIELD WORK PROPOSALS.—

4           “(1) ASSISTANCE AND COORDINATION.—In car-  
5 rying out the program of methane hydrate research  
6 and development authorized by this section, the Sec-  
7 retary may award grants, or enter into contracts or  
8 cooperative agreements to—

9           “(A) conduct research to identify the envi-  
10 ronmental, health, and safety impacts of meth-  
11 ane hydrate development;

12           “(B) assess and develop technologies to  
13 mitigate environmental impacts of the explo-  
14 ration and commercial development of methane  
15 hydrates as an energy resource, including the  
16 use of seismic testing, and to reduce the public  
17 health and safety risks of drilling through  
18 methane hydrates;

19           “(C) conduct research to assess and miti-  
20 gate the environmental impact of hydrate  
21 degassing (including natural degassing and  
22 degassing associated with commercial develop-  
23 ment); or

24           “(D) expand education and training pro-  
25 grams in methane hydrate resource research

1           and resource development through fellowships  
2           or other means for graduate education and  
3           training.

4           “(2) ENVIRONMENTAL MONITORING AND RE-  
5           SEARCH.—The Secretary shall conduct a long-term  
6           environmental monitoring and research program to  
7           study the effects of production from methane hy-  
8           drate reservoirs.

9           “(3) COMPETITIVE PEER REVIEW.—Funds  
10          made available to carry out paragraphs (1) and (2)  
11          shall be made available based on a competitive proc-  
12          ess using external scientific peer review of proposed  
13          research.”.

14          (b) CONFORMING AMENDMENT.—Section 4(e) of  
15          such Act (30 U.S.C. 2003(e)) is amended in the matter  
16          preceding paragraph (1) by striking “subsection (b)(1)”  
17          and inserting “paragraphs (1) and (2) of subsection (b)”.

18          (c) AUTHORIZATION OF APPROPRIATIONS.—Section  
19          7 of such Act (30 U.S.C. 2006) is amended to read as  
20          follows:

21          **“SEC. 7. AUTHORIZATION OF APPROPRIATIONS.**

22          “‘There are authorized to be appropriated to the Sec-  
23          retary to carry out this Act \$15,000,000, to remain avail-  
24          able until expended, for each of fiscal years 2021 through  
25          2025.’”.



1   **SEC. 3110. CARBON REMOVAL.**

2           Subtitle F of title IX of the Energy Policy Act of  
3   2005 (42 U.S.C. 16291 et seq.) is further amended by  
4   adding at the end the following:

5   **“SEC. 970C. CARBON REMOVAL.**

6           “(a) ESTABLISHMENT.—The Secretary, in coordina-  
7   tion with the appropriate Federal agencies, shall establish  
8   a research, development, and demonstration program to  
9   remove carbon dioxide from the atmosphere on a large  
10  scale. The program may include activities in—

11           “(1) direct air capture and storage technologies;

12           “(2) enhanced carbon mineralization;

13           “(3) bioenergy with carbon capture and seques-  
14  tration;

15           “(4) agricultural and grazing practices;

16           “(5) forest management and afforestation; and

17           “(6) planned or managed carbon sinks, includ-  
18  ing natural and artificial.

19           “(b) PRIORITIZATION.—In carrying out the program  
20  established in subsection (a), the Secretary shall  
21  prioritize—

22           “(1) the activities described in paragraphs (1)  
23   and (2) of subsection (a), acting through the Assist-  
24   ant Secretary for Fossil Energy; and

25           “(2) the activities described in subsection  
26   (a)(3), acting through the Assistant Secretary for

1 Energy Efficiency and Renewable Energy and the  
2 Assistant Secretary for Fossil Energy.

3 “(c) CONSIDERATIONS.—The program under this  
4 section shall identify and develop carbon removal tech-  
5 nologies and strategies that consider the following:

6 “(1) Land use changes, including impacts on  
7 natural and managed ecosystems.

8 “(2) Ocean acidification.

9 “(3) Net greenhouse gas emissions.

10 “(4) Commercial viability.

11 “(5) Potential for near-term impact.

12 “(6) Potential for carbon reductions on a  
13 gigaton scale.

14 “(7) Economic co-benefits.

15 “(d) ACCOUNTING.—The Department shall collabo-  
16 rate with the Environmental Protection Agency and other  
17 relevant agencies to develop and improve accounting  
18 frameworks and tools to accurately measure carbon re-  
19 moval and sequestration methods and technologies across  
20 the Federal Government.

21 “(e) AIR CAPTURE TECHNOLOGY PRIZE.—Not later  
22 than 1 year after the date of enactment of this Act, as  
23 part of the program carried out under this section, the  
24 Secretary shall carry out a program to award competitive  
25 technology prizes for carbon dioxide capture from ambient

1 air or water. In carrying out this subsection, the Secretary  
2 shall—

3 “(1) in accordance with section 24 of the Ste-  
4 venson-Wylder Technology Innovation Act of 1980  
5 (15 U.S.C. 3719), develop requirements for—

6 “(A) the prize competition process;

7 “(B) minimum performance standards for  
8 projects eligible to participate in the prize com-  
9 petition; and

10 “(C) monitoring and verification proce-  
11 dures for projects selected to receive a prize  
12 award;

13 “(2) establish minimum levels for the capture of  
14 carbon dioxide from ambient air or water that are  
15 required to qualify for a prize award; and

16 “(3) offer prize awards for any of the following:

17 “(A) A design for a promising capture  
18 technology that will—

19 “(i) be operated on a demonstration  
20 scale; and

21 “(ii) have the potential to achieve sig-  
22 nificant reduction in the level of carbon di-  
23 oxide in the atmosphere.

24 “(B) A successful bench-scale demonstra-  
25 tion of a capture technology.

1 “(f) COMMERCIAL DIRECT AIR CAPTURE PRIZE.—

2 “(1) DEFINITIONS.—In this subsection:

3 “(A) QUALIFIED CARBON DIOXIDE.—

4 “(i) IN GENERAL.—The term ‘quali-  
5 fied carbon dioxide’ means any carbon di-  
6 oxide that—

7 “(I) is captured directly from the  
8 ambient air; and

9 “(II) is measured at the source  
10 of capture and verified at the point of  
11 disposal, injection, or utilization.

12 “(ii) INCLUSION.—The term ‘qualified  
13 carbon dioxide’ includes the initial deposit  
14 of captured carbon dioxide used as a ter-  
15 tiary injectant.

16 “(iii) EXCLUSION.—The term ‘quali-  
17 fied carbon dioxide’ does not include car-  
18 bon dioxide that is recaptured, recycled,  
19 and reinjected as part of the enhanced oil  
20 and natural gas recovery process.

21 “(B) QUALIFIED DIRECT AIR CAPTURE FA-  
22 CILITY.—

23 “(i) IN GENERAL.—Subject to clause  
24 (ii), the term ‘qualified direct air capture  
25 facility’ means any facility that—

1                   “(I) uses carbon capture equip-  
2                   ment to capture carbon dioxide di-  
3                   rectly from the ambient air; and

4                   “(II) captures more than 10,000  
5                   metric tons of qualified carbon dioxide  
6                   annually.

7                   “(ii) EXCLUSION.—The term ‘quali-  
8                   fied direct air capture facility’ does not in-  
9                   clude any facility that captures carbon di-  
10                  oxide—

11                  “(I) that is deliberately released  
12                  from naturally occurring subsurface  
13                  springs; or

14                  “(II) using natural photosyn-  
15                  thesis.

16                  “(2) ESTABLISHMENT.—Not later than 1 year  
17                  after the date of enactment of this section, the Sec-  
18                  retary, in consultation with the Administrator of the  
19                  Environmental Protection Agency, shall establish a  
20                  commercial direct air capture prize designed to sig-  
21                  nificantly reward commercial applications of direct  
22                  air capture technologies.

23                  “(3) COMMERCIAL DIRECT AIR CAPTURE PRIZE  
24                  PROGRAM.—

1           “(A) AWARDS.—Under the prize program,  
2           the Secretary shall provide financial awards in  
3           a competitive setting equally for each ton of  
4           qualified carbon dioxide captured by a qualified  
5           direct air capture facility until appropriated  
6           funds are expended. The prize per metric ton  
7           shall not exceed—

8                   “(i) \$180 for qualified carbon dioxide  
9                   captured and stored in saline storage for-  
10                  mations;

11                   “(ii) a lesser amount as determined by  
12                   the Secretary for qualified carbon dioxide  
13                   captured and stored in conjunction with  
14                   enhanced oil recovery operations; or

15                   “(iii) a lesser amount as determined  
16                   by the Secretary for qualified carbon diox-  
17                   ide captured and utilized in any activity  
18                   consistent with section 45Q(f)(5) of the In-  
19                   ternal Revenue Code of 1986.

20           “(B) ADMINISTRATION.—

21                   “(i) REQUIREMENTS.—Not later than  
22                   1 year after the date of enactment of this  
23                   section, the Administrator, in consultation  
24                   with the Secretary, shall submit require-  
25                   ments for qualifying metric tons of carbon

1                   dioxide. In carrying out this clause, the  
2                   Administrator shall develop specific re-  
3                   quirements for—

4                               “(I) the process of applying for  
5                               prizes; and

6                               “(II) the demonstration of per-  
7                               formance of approved projects.

8                               “(ii) DETERMINATION.—For purposes  
9                               of determining the amount of metric tons  
10                              of qualified carbon dioxide eligible for  
11                              prizes under clause (i), the amount shall be  
12                              equal to the net metric tons of carbon di-  
13                              oxide removal demonstrated by the recipi-  
14                              ent, subject to the requirements set forth  
15                              by the Administrator under such clause.

16                             “(C) SCHEDULE OF PAYMENT.—The Sec-  
17                             retary shall award prizes on an annual basis to  
18                             qualified direct air capture facilities for metric  
19                             tons of qualified carbon dioxide captured and  
20                             verified at the point of disposal, injection, or  
21                             utilization.

22                             “(4) AUTHORIZATION OF APPROPRIATIONS.—  
23                             There are authorized to be appropriated to carry out  
24                             this subsection \$200,000,000 for the period of fiscal  
25                             years 2021 through 2025, and \$400,000,000 for the

1 period of fiscal years 2026 through 2030, to remain  
2 available until expended.

3 “(g) DIRECT AIR CAPTURE TEST CENTER.—

4 “(1) IN GENERAL.—Not later than 1 year after  
5 the date of enactment of this section, the Secretary  
6 shall award grants to one or more eligible entities  
7 for the operation of one or more test centers (in this  
8 subsection, known as ‘Centers’) to provide unique  
9 testing capabilities for innovative direct air capture  
10 and storage technologies.

11 “(2) PURPOSE.—Each Center shall—

12 “(A) advance research, development, dem-  
13 onstration, and commercial application of direct  
14 air capture and storage technologies;

15 “(B) support pilot plant and full-scale  
16 demonstration projects and test technologies  
17 that represent the scale of technology develop-  
18 ment beyond laboratory testing but not yet ad-  
19 vanced to test under operational conditions at  
20 commercial scale;

21 “(C) develop front-end engineering design  
22 and economic analysis; and

23 “(D) maintain a public record of pilot and  
24 full-scale plant performance.



1           “(3) PRIORITY CRITERIA.—In selecting applica-  
2           tions to operate a Center under this subsection, the  
3           Secretary shall prioritize applicants that—

4                   “(A) have access to existing or planned re-  
5                   search facilities;

6                   “(B) are institutions of higher education  
7                   with established expertise in engineering for di-  
8                   rect air capture technologies, or partnerships  
9                   with such institutions; or

10                   “(C) have access to existing research and  
11                   test facilities for bulk materials design and test-  
12                   ing, component design and testing, or profes-  
13                   sional engineering design.

14           “(4) SCHEDULE.—Each grant to operate a  
15           Center under this subsection shall be awarded for a  
16           term of not more than 5 years, subject to the avail-  
17           ability of appropriations. The Secretary may renew  
18           such 5-year term without limit, subject to a rigorous  
19           merit review.

20           “(5) TERMINATION.—To the extent otherwise  
21           authorized by law, the Secretary may eliminate the  
22           center during any 5-year term described in the last  
23           paragraph if it is underperforming.

24           “(h) LARGE-SCALE PILOTS AND DEMONSTRA-  
25           TIONS.—In supporting the technology development activi-

1 ties under this section, the Secretary is encouraged to sup-  
2 port carbon removal pilot and demonstration projects, in-  
3 cluding—

4 “(1) pilot projects that test direct air capture  
5 systems capable of capturing 10 to 100 tonnes of  
6 carbon oxides per year to provide data for dem-  
7 onstration-scale projects; and

8 “(2) direct air capture demonstration projects  
9 capable of capturing greater than 1,000 tonnes of  
10 carbon oxides per year.

11 “(i) INTRA-AGENCY RESEARCH.—In carrying out the  
12 program established in (a), the Secretary shall encourage  
13 and promote collaborations among relevant offices and  
14 agencies within the Department.

15 “(j) AUTHORIZATION OF APPROPRIATIONS.—There  
16 are authorized to be appropriated to the Secretary for ac-  
17 tivities under this section—

18 “(1) \$275,000,000 for fiscal year 2021, of  
19 which \$15,000,000 are authorized to carry out sub-  
20 section (e) and of which \$200,000,000 are author-  
21 ized to carry out subsection (f);

22 “(2) \$263,000,000 for fiscal year 2022, of  
23 which \$200,000,000 are authorized to carry out sub-  
24 section (f);

1 “(3) \$266,150,000 for fiscal year 2023, of  
2 which \$200,000,000 are authorized to carry out sub-  
3 section (f);

4 “(4) \$269,458,000 for fiscal year 2024, of  
5 which \$200,000,000 are authorized to carry out sub-  
6 section (f); and

7 “(5) \$272,930,000 for fiscal year 2025, of  
8 which \$200,000,000 are authorized to carry out sub-  
9 section (f).”.

10 **SEC. 3111. METHANE LEAK DETECTION AND MITIGATION.**

11 Subtitle F of title IX of the Energy Policy Act of  
12 2005 (42 U.S.C. 16291 et seq.) is further amended by  
13 adding at the end the following:

14 **“SEC. 970D. METHANE LEAK DETECTION AND MITIGATION.**

15 “(a) IN GENERAL.—The Secretary, in consultation  
16 with the Administrator of the Environmental Protection  
17 Agency and other appropriate Federal agencies, shall  
18 carry out a program of methane leak detection and mitiga-  
19 tion research, development, demonstration, and commer-  
20 cial application for technologies and methods that signifi-  
21 cantly reduce emissions. In carrying out the program, the  
22 Secretary shall—

23 “(1) develop cooperative agreements with State  
24 or local governments or private entities to provide  
25 technical assistance to—

1           “(A) prevent or respond to methane leaks,  
2           including detection, mitigation, and identifica-  
3           tion of leaks throughout the natural gas infra-  
4           structure (which includes natural gas storage,  
5           pipelines, and natural gas production sites); and

6           “(B) protect public health in the event of  
7           a major methane leak;

8           “(2) promote demonstration and adoption of ef-  
9           fective methane emissions-reduction technologies in  
10          the private sector;

11          “(3) in coordination with representatives from  
12          private industry, State and local governments, and  
13          institutions of higher education, create a publicly ac-  
14          cessible resource for best practices in the design,  
15          construction, maintenance, performance, monitoring,  
16          and incident response for—

17               “(A) pipeline systems;

18               “(B) wells;

19               “(C) compressor stations;

20               “(D) storage facilities; and

21               “(E) other vulnerable infrastructure;

22          “(4) identify high-risk characteristics of pipe-  
23          lines, wells, and materials, geologic risk factors, or  
24          other key factors that increase the likelihood of  
25          methane leaks; and

1 “(5) in collaboration with private entities and  
2 institutions of higher education, quantify and map  
3 significant geologic methane seeps across the United  
4 States.

5 “(b) CONSIDERATIONS.—In carrying out the pro-  
6 gram under this section, the Secretary shall consider the  
7 following:

8 “(1) Historical data of methane leaks.

9 “(2) Public health consequences.

10 “(3) Public safety.

11 “(4) Novel materials and designs for pipelines,  
12 compressor stations, components, and wells (includ-  
13 ing casing, cement, wellhead).

14 “(5) Regional geologic traits.

15 “(6) Induced and natural seismicity.

16 “(c) AUTHORIZATION OF APPROPRIATIONS.—There  
17 are authorized to be appropriated to the Secretary for ac-  
18 tivities under this section—

19 “(1) \$22,000,000 for fiscal year 2021;

20 “(2) \$23,100,000 for fiscal year 2022;

21 “(3) \$24,255,000 for fiscal year 2023;

22 “(4) \$25,467,750 for fiscal year 2024; and

23 “(5) \$26,741,138 for fiscal year 2025.”.

1 **SEC. 3112. WASTE GAS UTILIZATION.**

2 Subtitle F of title IX of the Energy Policy Act of  
3 2005 (42 U.S.C. 16291 et seq.) is further amended by  
4 adding at the end the following:

5 **“SEC. 970E. WASTE GAS UTILIZATION.**

6 “The Secretary shall carry out a program of research,  
7 development, and demonstration for waste gas utilization.  
8 The program shall—

9 “(1) identify and evaluate novel uses for light  
10 hydrocarbons, such as methane, ethane, propane,  
11 butane, pentane, and hexane, produced during oil  
12 and shale gas production, including the production  
13 of chemicals or transportation fuels;

14 “(2) develop advanced gas conversion tech-  
15 nologies that are modular and compact, and may le-  
16 verage advanced manufacturing technologies;

17 “(3) support demonstration activities at oper-  
18 ating oil and gas facilities to test the performance  
19 and cost-effectiveness of new gas conversion tech-  
20 nologies; and

21 “(4) assess and monitor potential changes in  
22 life cycle greenhouse gas emissions that may result  
23 from the use of technologies developed under this  
24 program.”.

1 **SEC. 3113. NATIONAL ENERGY TECHNOLOGY LABORATORY**  
2 **REFORMS.**

3 (a) SPECIAL HIRING AUTHORITY FOR SCIENTIFIC,  
4 ENGINEERING, AND PROJECT MANAGEMENT PER-  
5 SONNEL.—

6 (1) IN GENERAL.—The Director of the National  
7 Energy Technology Laboratory shall have the au-  
8 thority to—

9 (A) make appointments to positions in the  
10 Laboratory to assist in meeting a specific  
11 project or research need, without regard to civil  
12 service laws, of individuals who—

13 (i) have an advanced scientific or en-  
14 gineering background; or

15 (ii) have a business background and  
16 can assist in specific technology-to-market  
17 needs;

18 (B) fix the basic pay of any employee ap-  
19 pointed under this section at a rate not to ex-  
20 ceed level II of the Executive Schedule; and

21 (C) pay any employee appointed under this  
22 section payments in addition to basic pay, ex-  
23 cept that the total amount of additional pay-  
24 ments paid to an employee under this sub-  
25 section for any 12-month period shall not ex-  
26 ceed the least of—

1 (i) \$25,000;

2 (ii) the amount equal to 25 percent of  
3 the annual rate of basic pay of that em-  
4 ployee; and

5 (iii) the amount of the limitation that  
6 is applicable for a calendar year under sec-  
7 tion 5307(a)(1) of title 5, United States  
8 Code.

9 (2) LIMITATIONS.—

10 (A) IN GENERAL.—The term of any em-  
11 ployee appointed under this section shall not ex-  
12 ceed 3 years.

13 (B) FULL-TIME EMPLOYEES.—Not more  
14 than 10 full-time employees appointed under  
15 this subsection may be employed at the Na-  
16 tional Energy Technology Laboratory at any  
17 given time.

18 (b) DISCRETIONARY RESEARCH AND DEVELOP-  
19 MENT.—

20 (1) IN GENERAL.—The Secretary shall establish  
21 mechanisms under which the Director of the Na-  
22 tional Energy Technology Laboratory may use an  
23 amount that is, in total, not less than 2 percent and  
24 not more than 4 percent of all funds available to the  
25 Laboratory for the following purposes:



1 (A) To fund innovative research that is  
2 conducted at the Laboratory and supports the  
3 mission of the Department.

4 (B) To fund technology development pro-  
5 grams that support the transition of tech-  
6 nologies developed by the Laboratory into the  
7 commercial market.

8 (C) To fund workforce development activi-  
9 ties to strengthen external engineering and  
10 manufacturing partnerships to ensure safe, effi-  
11 cient, productive, and useful fossil energy tech-  
12 nology production.

13 (D) To fund the revitalization, recapitaliza-  
14 tion, or minor construction of the Laboratory  
15 infrastructure.

16 (2) PRIORITIZATION.—The Director shall  
17 prioritize innovative experiments and proposals pro-  
18 posed by scientists and researchers at the National  
19 Energy Technology Laboratory.

20 (3) ANNUAL REPORT ON USE OF AUTHORITY.—  
21 Not later than March 1 of each year, the Secretary  
22 shall submit to the Committee on Science, Space,  
23 and Technology of the House of Representatives and  
24 the Committee on Energy and Natural Resources of  
25 the Senate a report on the use of the authority

1       under this subsection during the preceding fiscal  
2       year.

3       (c) LABORATORY OPERATIONS.—The Secretary shall  
4       delegate human resources operations of the National En-  
5       ergy Technology Laboratory to the Director of the Na-  
6       tional Energy Technology Laboratory.

7       (d) REVIEW.—Not later than 2 years after the date  
8       of enactment of this Act, the Secretary shall submit to  
9       the Committee on Science, Space, and Technology of the  
10      House of Representatives and the Committee on Energy  
11      and Natural Resources of the Senate a report assessing  
12      the National Energy Technology Laboratory’s manage-  
13      ment and research. The report shall include—

14           (1) an assessment of the quality of science and  
15           research at the National Energy Technology Labora-  
16           tory relative to similar work at other national lab-  
17           oratories;

18           (2) a review of the effectiveness of authorities  
19           provided in subsections (a) and (b); and

20           (3) recommendations for policy changes within  
21           the Department and legislative changes to provide  
22           the National Energy Technology Laboratory the nec-  
23           essary tools and resources to advance its research  
24           mission.

1   **SEC. 3114. CLIMATE SOLUTIONS CHALLENGES.**

2           (a) **AUTHORITY.**—Not later than 180 days after the  
3 date of enactment of this Act, the Secretary of Energy  
4 shall establish a program to be known as “Fossil Energy  
5 Climate Solutions Challenges” for carrying out prize com-  
6 petitions described under subsection (d) pursuant to sec-  
7 tion 24 of the Stevenson-Wydler Technology Innovation  
8 Act of 1980 (15 U.S.C. 3719) relating to the climate and  
9 energy.

10          (b) **PRIZE COMMITTEES.**—

11               (1) **IN GENERAL.**—The Secretary shall assem-  
12 ble a prize committee that shall define the scope and  
13 detail of, and provide the requirements for, the prize  
14 competitions under this section. Such committee  
15 may be composed of—

16                       (A) members from the Office of Fossil En-  
17 ergy, Advanced Research Projects Energy, Of-  
18 fice of Technology Transitions, or other offices  
19 that most appropriately corresponds with the  
20 topic of the prize competition; and

21                       (B) representatives of any other entities,  
22 as determined appropriate by the Secretary, in-  
23 cluding other Federal agencies, State and local  
24 governments, and the private sector.

25               (2) **DEFINING TOPIC AREAS.**—The prize com-  
26 mittee may modify and define the scope of the prize

1 areas described under subsection (c), so long as such  
2 modification is in accordance with descriptions in  
3 such subsection.

4 (3) INCENTIVE FOR PRIZE COMPETITION.—The  
5 prize committee for each prize competition shall de-  
6 termine the incentive for the prize competition. In  
7 determining the incentive, the committee shall con-  
8 sider—

9 (A) a cash prize;

10 (B) access to Government facilities, such  
11 as through a lab-embedded entrepreneurship  
12 program of the Department of Energy, a coop-  
13 erative research and development agreement, or  
14 other method;

15 (C) advance market commitments for tech-  
16 nologies of use or promise to the Federal Gov-  
17 ernment; and

18 (D) any other incentive provided for by  
19 law.

20 (4) JUDGING CRITERIA.—The prize committee  
21 for each prize competition shall establish judging cri-  
22 teria for the competition that shall include, at a min-  
23 imum—

1 (A) potential for the solution to become a  
2 commercial product or service or advance  
3 knowledge to further the public good;

4 (B) consideration of how likely the solution  
5 is to lead to subsequent research, development,  
6 deployment, or manufacturing in the United  
7 States;

8 (C) the degree to which the solution will  
9 lower the climate footprint of the United States;  
10 and

11 (D) the degree to which the solution will  
12 lower the global climate footprint.

13 (5) CONSIDERATION.—In carrying out this sec-  
14 tion, the committee shall take into consideration the  
15 best practices provided for in the challenges and  
16 prizes toolkit made publicly available on December  
17 15, 2016, by the General Services Administration.

18 (c) PRIZE COMPETITIONS.—In carrying out the pro-  
19 gram, the Secretary shall offer prize awards for any of  
20 the following:

21 (1) Solutions to capture carbon emissions from  
22 sources that would otherwise be emitted to the at-  
23 mosphere.

24 (2) Solutions to convert carbon emissions to a  
25 beneficial use that does not result in near-term re-

1 release into the atmosphere, unless such re-release  
2 offsets the emission of additional carbon into the at-  
3 mosphere, such that the net effect of the solution is  
4 to reduce the overall amount of carbon being emitted  
5 to the atmosphere.

6 (3) Other solutions that have potential to  
7 achieve reduction in greenhouse gas emissions asso-  
8 ciated with fossil-based energy production.

9 (d) ACCEPTANCE OF FUNDS.—In addition to such  
10 sums as may be appropriated or otherwise made available  
11 to the Secretary to award prizes under this section, the  
12 Secretary may accept funds from other Federal agencies,  
13 private sector entities, and State and local governments  
14 to award prizes under this section. The Secretary may not  
15 give any special consideration relating to the selection of  
16 awards under the prize competition to any private sector  
17 entity or individual in return for a donation to the Sec-  
18 retary or prize committee.

19 (e) ELIGIBILITY.—Notwithstanding section 24(g)(3)  
20 of the Stevenson-Wydler Technology Innovation Act of  
21 1980 (15 U.S.C. 3719(g)(3)), a group may be eligible for  
22 an award under this section if one or more members of  
23 such group is a citizen or permanent resident of the  
24 United States.

1 (f) COMPLETION OF PRIZE COMPETITIONS.—The  
2 prize competitions carried out under this section shall be  
3 completed not later than the date that is 5 years after  
4 the program is established under subsection (a).

5 (g) AUTHORIZATION OF APPROPRIATIONS.—There is  
6 authorized to be appropriated \$15,000,000 to carry out  
7 this section, to remain available until expended.

8 **Subtitle B—Controlling Methane**  
9 **Leaks**

10 **SEC. 3201. IMPROVING THE NATURAL GAS DISTRIBUTION**  
11 **SYSTEM.**

12 (a) PROGRAM.—The Secretary of Energy shall estab-  
13 lish a grant program to provide financial assistance to  
14 States to offset the incremental rate increases paid by low-  
15 income households resulting from the implementation of  
16 State-approved infrastructure replacement, repair, and  
17 maintenance programs designed to accelerate the nec-  
18 essary replacement, repair, or maintenance of natural gas  
19 distribution systems.

20 (b) DATE OF ELIGIBILITY.—Awards may be provided  
21 under this section to offset rate increases described in sub-  
22 section (a) occurring on or after the date of enactment  
23 of this Act.

24 (c) PRIORITIZATION.—The Secretary shall collabo-  
25 rate with States to prioritize the distribution of grants

1 made under this section. At a minimum, the Secretary  
2 shall consider prioritizing the distribution of grants to  
3 States which have—

4 (1) authorized or adopted enhanced infrastruc-  
5 ture replacement programs or innovative rate recov-  
6 ery mechanisms, such as infrastructure cost trackers  
7 and riders, infrastructure base rate surcharges, de-  
8 ferred regulatory asset programs, and earnings sta-  
9 bility mechanisms; and

10 (2) a viable means for delivering financial as-  
11 sistance to low-income households.

12 (d) AUDITING AND REPORTING REQUIREMENTS.—  
13 The Secretary shall establish auditing and reporting re-  
14 quirements for States with respect to the performance of  
15 eligible projects funded pursuant to grants awarded under  
16 this section.

17 (e) PREVAILING WAGES.—All laborers and mechanics  
18 employed by contractors or subcontractors in the perform-  
19 ance of construction, alteration, or repair work assisted,  
20 in whole or in part, by a grant under this section shall  
21 be paid wages at rates not less than those prevailing on  
22 similar construction in the locality as determined by the  
23 Secretary of Labor in accordance with subchapter IV of  
24 chapter 31 of title 40. With respect to the labor standards  
25 in this subsection, the Secretary of Labor shall have the



1 authority and functions set forth in Reorganization Plan  
2 Numbered 14 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and  
3 section 3145 of title 40.

4 (f) DEFINITIONS.—In this section:

5 (1) INNOVATIVE RATE RECOVERY MECHA-  
6 NISMS.—The term “innovative rate recovery mecha-  
7 nisms” means rate structures that allow State public  
8 utility commissions to modify tariffs and recover  
9 costs of investments in utility replacement incurred  
10 between rate cases.

11 (2) LOW-INCOME HOUSEHOLD.—The term  
12 “low-income household” means a household that is  
13 eligible to receive payments under section 2605(b)(2)  
14 of the Low-Income Home Energy Assistance Act of  
15 1981 (42 U.S.C. 8624(b)(2)).

16 (g) AUTHORIZATION OF APPROPRIATIONS.—There  
17 are authorized to be appropriated to the Secretary to carry  
18 out this section \$250,000,000 in each of fiscal years 2021  
19 through 2025.

1           **Subtitle C—Eminent Domain**  
2                           **Reform**

3   **SEC. 3301. MODIFICATIONS TO EXERCISE OF THE RIGHT OF**  
4                           **EMINENT DOMAIN BY HOLDER OF A CERTIFI-**  
5                           **CATE OF PUBLIC CONVENIENCE AND NECES-**  
6                           **SITY.**

7           (a) REQUIREMENT.—Section 7(h) of the Natural Gas  
8 Act (15 U.S.C. 717f(h)) is amended—

9                   (1) by striking “When any holder” and insert-  
10           ing the following: “ (1) Subject to paragraph (2),  
11           when any holder”; and

12                   (2) by adding at the end the following new  
13           paragraphs:

14           “(2) A holder of a certificate of public convenience  
15 and necessity may not exercise the right of eminent do-  
16 main under paragraph (1) unless the holder—

17                   “(A) obtains all Federal and State permits re-  
18           quired by law for the construction and operation of  
19           pipeline facilities; and

20                   “(B) complies with all environmental conditions  
21           appended to the certificate order.

22           “(3) A holder of a certificate of public convenience  
23 and necessity shall be suspended from the exercise of the  
24 right of eminent domain under paragraph (1)—

1           “(A) if the holder requests a material amend-  
2           ment to the certificate, until such time as the condi-  
3           tions in paragraph (4) are satisfied; or

4           “(B) if a Federal or State permit held by the  
5           holder is vacated or remanded, until such time as—

6                 “(i) all vacated or remanded permits are  
7                 reinstated or reissued to the holder; and

8                 “(ii) the holder complies with all environ-  
9                 mental conditions appended to the certificate  
10                order.

11          “(4) A holder of a certificate of public convenience  
12          and necessity who requests a material amendment to the  
13          certificate and has the exercise of the right of eminent do-  
14          main suspended under paragraph (3)(A) may not com-  
15          mence a new action or proceeding to exercise the right  
16          of eminent domain under paragraph (1) until such time  
17          as—

18                “(A) the Commission issues an amended certifi-  
19                cate of public convenience and necessity; and

20                “(B) the holder—

21                   “(i) obtains all additional Federal and  
22                   State permits required by law pursuant to the  
23                   amended certificate; and

1                   “(ii) complies with all environmental condi-  
2                   tions appended to the amended certificate  
3                   order.

4           “(5) A holder of a certificate of public convenience  
5 and necessity may not exercise the right of eminent do-  
6 main under paragraph (1) if the applicable pipe line or  
7 pipe lines, necessary land or other property, or equipment  
8 necessary to the proper operation of such pipe line or pipe  
9 lines to be constructed, operated, and maintained is at-  
10 tached to any facility with respect to which an order is  
11 required under section 3.”.

12           (b) EFFECTIVE DATE.—The amendments made by  
13 this subtitle shall apply—

14                   (1) to any action or proceeding for eminent do-  
15 main under section 7(h)(1) of the Natural Gas Act,  
16 as amended by this subtitle, commencing on or after  
17 the date of enactment of this Act; and

18                   (2) to any request for a material amendment to  
19 a certificate of public convenience and necessity oc-  
20 ccurring on or after the date of enactment of this  
21 Act.

1       **TITLE IV—NUCLEAR ENERGY**  
2       **Subtitle A—Advanced Nuclear Fuel**  
3       **Availability**

4       **SECTION 4101. PROGRAM.**

5           (a) ESTABLISHMENT.—The Secretary shall establish  
6       and carry out, through the Office of Nuclear Energy, a  
7       program to support the availability of HA–LEU for civil-  
8       ian domestic demonstration and commercial use.

9           (b) PROGRAM ELEMENTS.—In carrying out the pro-  
10      gram under subsection (a), the Secretary—

11           (1) shall develop, in consultation with the Com-  
12      mission, criticality benchmark data to assist the  
13      Commission in—

14           (A) the licensing and regulation of cat-  
15      egory II spent nuclear material fuel fabrication  
16      and enrichment facilities under part 70 of title  
17      10, Code of Federal Regulations; and

18           (B) certification of transportation pack-  
19      ages under part 71 of title 10, Code of Federal  
20      Regulations;

21           (2) may conduct research and development, and  
22      provide financial assistance to assist commercial en-  
23      tities, to design and license transportation packages  
24      for HA–LEU, including canisters for metal, gas,  
25      and other HA–LEU compositions;

1 (3) shall, to the extent practicable—

2 (A) by January 1, 2024, have commercial  
3 entities submit such transportation package de-  
4 signs to the Commission for certification by the  
5 Commission under part 71 of title 10, Code of  
6 Federal Regulations; and

7 (B) encourage the Commission to have  
8 such transportation package designs so certified  
9 by the Commission by January 1, 2026;

10 (4) shall consider options for acquiring or pro-  
11 viding HA-LEU from a stockpile of uranium owned  
12 by the Department, or using enrichment technology,  
13 to make available to members of the consortium es-  
14 tablished pursuant to paragraph (6) for commercial  
15 use or demonstration projects, taking into account  
16 cost and amount of time required, and prioritizing  
17 methods that would produce usable HA-LEU the  
18 quickest, including options for acquiring or providing  
19 HA-LEU—

20 (A) that—

21 (i) directly meets the needs of an end  
22 user; and

23 (ii) has been previously used or fab-  
24 ricated for another purpose;

1 (B) that meets the needs of an end user  
2 after having radioactive or other contaminants  
3 that resulted from a previous use or fabrication  
4 of the fuel for research, development, dem-  
5 onstration, or deployment activities of the De-  
6 partment removed;

7 (C) that is produced from high-enriched  
8 uranium that is blended with lower assay ura-  
9 nium to become HA–LEU to meet the needs of  
10 an end user; or

11 (D) that is produced by United States or  
12 foreign-owned commercial entities;

13 (5) not later than 1 year after the date of en-  
14 actment of this Act, and biennially thereafter, shall  
15 conduct a survey of stakeholders to estimate the  
16 quantity of HA–LEU necessary for domestic com-  
17 mercial use for each of the 5 subsequent years;

18 (6) shall establish a consortium, which may in-  
19 clude entities involved in any stage of the nuclear  
20 fuel cycle, to partner with the Department to sup-  
21 port the availability of HA–LEU for civilian domes-  
22 tic demonstration and commercial use, including  
23 by—

1 (A) providing information to the Secretary  
2 for purposes of surveys conducted under para-  
3 graph (5);

4 (B) purchasing HA–LEU made available  
5 to members of the consortium by the Secretary  
6 under the program; and

7 (C) carrying out demonstration projects  
8 using HA–LEU awarded by the Secretary under  
9 the program;

10 (7) shall, prior to acquiring or providing HA–  
11 LEU under paragraph (8), in coordination with the  
12 consortium established pursuant to paragraph (6),  
13 develop a schedule for cost recovery of HA–LEU  
14 made available to members of the consortium using  
15 HA–LEU for commercial use pursuant to paragraph  
16 (8);

17 (8) shall, beginning not later than 3 years after  
18 the establishment of a consortium under paragraph  
19 (6), have the capability to acquire or provide HA–  
20 LEU, in order to make such HA–LEU available to  
21 members of the consortium beginning not later than  
22 January 1, 2026, in amounts that are consistent, to  
23 the extent practicable, with—

24 (A) the quantities estimated under the sur-  
25 veys conducted under paragraph (5); plus



1 (B) the quantities necessary for dem-  
2 onstration projects carried out under the pro-  
3 gram, as determined by the Secretary; and

4 (9) shall, for advanced reactor demonstration  
5 projects, determine awardees of HA-LEU under this  
6 subtitle through a merit-based, competitive selection  
7 process.

8 (c) APPLICABILITY OF USEC PRIVATIZATION ACT.—

9 (1) SALE OR TRANSFER TO CONSORTIUM.—The  
10 requirements of subparagraphs (A) and (C) of sec-  
11 tion 3112(d)(2) of the USEC Privatization Act (42  
12 U.S.C. 2297h–10(d)(2)) shall apply to a sale or  
13 transfer of HA–LEU for commercial use by the Sec-  
14 retary to a member of the consortium under this  
15 section.

16 (2) DEMONSTRATION.—HA-LEU made avail-  
17 able to members of the consortium established pur-  
18 suant to subsection (b)(6) for demonstration projects  
19 shall remain the property of the Department, which  
20 shall be responsible for the storage, use, and disposi-  
21 tion of all radioactive waste created by the irradiation,  
22 processing, or purification of such uranium,  
23 and shall not be treated as a sale or transfer of ura-  
24 nium subject to sections 3112 and 3113 of the

1       USEC Privatization Act (42 U.S.C. 2297h–10; 42  
2       U.S.C. 2297h–11).

3       (d) DOE ACQUISITION OF HA–LEU.—The Sec-  
4       retary may not make commitments under this section (in-  
5       cluding cooperative agreements (used in accordance with  
6       section 6305 of title 31, United States Code), purchase  
7       agreements, guarantees, leases, service contracts, or any  
8       other type of commitment) for the purchase or other ac-  
9       quisition of HA–LEU unless funds are specifically pro-  
10      vided for such purposes in advance in subsequent appro-  
11      priations Acts, and only to the extent that the full extent  
12      of anticipated costs stemming from such commitments is  
13      recorded as an obligation up front and in full at the time  
14      it is made.

15      (e) SUNSET.—The authority of the Secretary to carry  
16      out the program under this section shall expire on the ear-  
17      lier of—

18               (1) September 30, 2034; or  
19               (2) 90 days after the date on which HA–LEU  
20      is available to provide a reliable and adequate supply  
21      for civilian domestic advanced nuclear reactors in  
22      the commercial market.

23      (f) LIMITATION.—The Secretary shall not barter or  
24      otherwise sell or transfer uranium in any form in exchange  
25      for services relating to the final disposition of radioactive

1 waste from uranium that is made available under this sec-  
2 tion.

3 **SEC. 4102. REPORTS TO CONGRESS.**

4 (a) COMMISSION REPORT ON NECESSARY REGU-  
5 LATORY UPDATES.—Not later than 12 months after the  
6 date of enactment of this Act, the Commission shall sub-  
7 mit to Congress a report that includes—

8 (1) identification of updates to regulations, cer-  
9 tifications, and other regulatory policies that the  
10 Commission determines are necessary in order for  
11 HA–LEU to be commercially available, including—

12 (A) guidance for material control and ac-  
13 countability of category II special nuclear mate-  
14 rial;

15 (B) certifications relating to transportation  
16 packaging for HA–LEU; and

17 (C) licensing of enrichment, conversion,  
18 and fuel fabrication facilities for HA–LEU, and  
19 associated physical security plans for such fa-  
20 cilities;

21 (2) a description of such updates; and

22 (3) a timeline to complete such updates.

23 (b) DOE REPORT ON PROGRAM TO SUPPORT THE  
24 AVAILABILITY OF HA–LEU FOR CIVILIAN DOMESTIC  
25 DEMONSTRATION AND COMMERCIAL USE.—

1           (1) IN GENERAL.—Not later than 180 days  
2       after the date of enactment of this section, the Sec-  
3       retary shall submit to Congress a report that de-  
4       scribes actions proposed to be carried out by the  
5       Secretary under the program described in section  
6       4101(a).

7           (2) COORDINATION AND STAKEHOLDER  
8       INPUT.—In developing the report under this sub-  
9       section, the Secretary shall consult with—

10                (A) the Nuclear Regulatory Commission;

11                (B) the National Nuclear Security Admin-  
12       istration;

13                (C) the National Laboratories;

14                (D) institutions of higher education;

15                (E) a diverse group of entities from the  
16       nuclear energy industry;

17                (F) a diverse group of technology devel-  
18       opers;

19                (G) experts in nuclear nonproliferation, en-  
20       vironmental safety, public health and safety,  
21       and economics; and

22                (H) members of the consortium created  
23       under section 4101(b)(6).

24           (3) COST AND SCHEDULE ESTIMATES.—The re-  
25       port under this subsection shall include estimated

1 costs, budgets, and timeframes for all activities car-  
2 ried out under this subtitle.

3 (4) REQUIRED EVALUATIONS.—The report  
4 under this subsection shall evaluate—

5 (A) the actions required to establish and  
6 carry out the program under section 4101(a)  
7 and the cost of such actions, including with re-  
8 spect to—

9 (i) proposed preliminary terms for  
10 contracting between the Department and  
11 recipients of HA-LEU under the program  
12 (including guidelines defining the roles and  
13 responsibilities between the Department  
14 and the recipient); and

15 (ii) the potential to coordinate with  
16 recipients of HA-LEU under the program  
17 regarding—

18 (I) fuel fabrication; and

19 (II) fuel transport;

20 (B) the potential sources and fuel forms  
21 available to provide uranium for the program  
22 under section 4101(a);

23 (C) options to coordinate the program  
24 under section 4101(a) with the operation of the  
25 versatile, reactor-based fast neutron source

1 under section 959A of the Energy Policy Act of  
2 2005 (as added by this title);

3 (D) the ability of uranium producers to  
4 provide materials for advanced nuclear reactor  
5 fuel;

6 (E) any associated legal, regulatory, and  
7 policy issues that should be addressed to en-  
8 able—

9 (i) implementation of the program  
10 under section 4101(a); and

11 (ii) the establishment of an industry  
12 capable of providing HA-LEU; and

13 (F) any research and development plans to  
14 develop criticality benchmark data under sec-  
15 tion 4101(b)(1), if needed.

16 (c) ALTERNATE FUELS REPORT.—Not later than  
17 180 days after the date of enactment of this Act, the Sec-  
18 retary shall, after consulting with relevant entities, includ-  
19 ing National Laboratories, institutions of higher edu-  
20 cation, and technology developers, submit to Congress a  
21 report identifying any and all options for providing nuclear  
22 material, containing isotopes other than the uranium-235  
23 isotope, such as uranium-233 and thorium-232 to be used  
24 as fuel for advanced nuclear reactor research, develop-  
25 ment, demonstration, or commercial application purposes.

1 **SEC. 4103. AUTHORIZATION OF APPROPRIATIONS.**

2 There are authorized to be appropriated to carry out  
3 this subtitle—

- 4 (1) \$31,500,000 for fiscal year 2021;  
5 (2) \$33,075,000 for fiscal year 2022;  
6 (3) \$34,728,750 for fiscal year 2023;  
7 (4) \$36,465,188 for fiscal year 2024; and  
8 (5) \$38,288,447 for fiscal year 2025.

9 **SEC. 4104. DEFINITIONS.**

10 In this subtitle:

11 (1) COMMISSION.—The term “Commission”  
12 means the Nuclear Regulatory Commission.

13 (2) DEPARTMENT.—The term “Department”  
14 means Department of Energy.

15 (3) HA-LEU.—The term “HA-LEU” means  
16 high-assay low-enriched uranium.

17 (4) HIGH-ASSAY LOW-ENRICHED URANIUM.—  
18 The term “high-assay low-enriched uranium” means  
19 uranium having an assay greater than 5.0 weight  
20 percent and less than 20.0 weight percent enrich-  
21 ment of the uranium-235 isotope.

22 (5) HIGH-ENRICHED URANIUM.—The term  
23 “high-enriched uranium” means uranium with an  
24 assay of 20.0 weight percent enrichment or more of  
25 the uranium-235 isotope.

1 (6) SECRETARY.—The term “Secretary” means  
2 the Secretary of Energy.

3 **Subtitle B—Nuclear Energy**  
4 **Leadership Act**

5 **SEC. 4201. DEFINITIONS.**

6 Section 951(b) of the Energy Policy Act of 2005 (42  
7 U.S.C. 16271(b)) is amended—

8 (1) by amending paragraph (1) to read as fol-  
9 lows:

10 “(1) **ADVANCED NUCLEAR REACTOR.**—The  
11 term ‘advanced nuclear reactor’ means—

12 “(A) a nuclear fission reactor, including a  
13 prototype plant (as defined in sections 50.2 and  
14 52.1 of title 10, Code of Federal Regulations  
15 (or successor regulations)), with significant im-  
16 provements compared to reactors operating on  
17 the date of enactment of the Clean Economy  
18 Jobs and Innovation Act, including improve-  
19 ments such as—

20 “(i) additional inherent safety fea-  
21 tures;

22 “(ii) lower waste yields;

23 “(iii) improved fuel and material per-  
24 formance;



1 “(iv) increased tolerance to loss of  
2 fuel cooling;

3 “(v) enhanced reliability;

4 “(vi) increased proliferation resist-  
5 ance;

6 “(vii) increased thermal efficiency;

7 “(viii) reduced consumption of cooling  
8 water and other environmental impacts;

9 “(ix) the ability to integrate into elec-  
10 tric applications and nonelectric applica-  
11 tions;

12 “(x) modular sizes to allow for deploy-  
13 ment that corresponds with the demand  
14 for electricity or process heat;

15 “(xi) operational flexibility to respond  
16 to changes in demand for electricity or  
17 process heat and to complement integra-  
18 tion with intermittent renewable energy or  
19 energy storage; or

20 “(xii) improved resilience; and

21 “(B) a fusion reactor.”; and

22 (2) by adding at the end the following:

23 “(7) INSTITUTION OF HIGHER EDUCATION.—

24 The term ‘institution of higher education’ has the  
25 meaning given the term in section 101(a) of the

1 Higher Education Act of 1965 (20 U.S.C.  
2 1001(a)).”.

3 **SEC. 4202. NUCLEAR ENERGY RESEARCH, DEVELOPMENT,**  
4 **DEMONSTRATION, AND COMMERCIAL APPLI-**  
5 **CATION PROGRAMS.**

6 (a) REACTOR CONCEPTS RESEARCH, DEVELOPMENT,  
7 AND DEMONSTRATION.—Section 952 of the Energy Policy  
8 Act of 2005 (42 U.S.C. 16272) is amended to read as  
9 follows:

10 **“SEC. 952. REACTOR CONCEPTS RESEARCH, DEVELOP-**  
11 **MENT, DEMONSTRATION, AND COMMERCIAL**  
12 **APPLICATION.**

13 “(a) SUSTAINABILITY PROGRAM FOR LIGHT WATER  
14 REACTORS.—

15 “(1) IN GENERAL.—The Secretary shall carry  
16 out a program of research, development, demonstra-  
17 tion, and commercial application to support existing  
18 operating nuclear power plants which shall address  
19 technologies to modernize and improve, with respect  
20 to such plants—

21 “(A) reliability;

22 “(B) capacity;

23 “(C) component aging;

24 “(D) safety;

25 “(E) physical security and security costs;

1 “(F) plant lifetime;

2 “(G) operations and maintenance costs, in-  
3 cluding by utilizing risk-informed systems anal-  
4 ysis;

5 “(H) the ability for plants to operate flexi-  
6 bly;

7 “(I) nuclear hybrid energy system applica-  
8 tions described in subsection (c);

9 “(J) efficiency;

10 “(K) environmental impacts; and

11 “(L) resilience.

12 “(2) AUTHORIZATION OF APPROPRIATIONS.—

13 There are authorized to be appropriated to the Sec-  
14 retary to carry out the program under this sub-  
15 section—

16 “(A) \$55,000,000 for fiscal year 2021;

17 “(B) \$57,750,000 for fiscal year 2022;

18 “(C) \$60,637,500 for fiscal year 2023;

19 “(D) \$63,669,375 for fiscal year 2024;

20 and

21 “(E) \$66,852,844 for fiscal year 2025.

22 “(b) ADVANCED REACTOR TECHNOLOGIES.—

23 “(1) IN GENERAL.—The Secretary shall carry  
24 out a program of research, development, demonstra-

1       tion, and commercial application to support ad-  
2       vanced reactor technologies.

3               “(2) REQUIREMENTS.—In carrying out the pro-  
4       gram under this subsection, the Secretary shall—

5               “(A) prioritize designs for advanced nu-  
6       clear reactors that are proliferation resistant  
7       and passively safe, including designs that, com-  
8       pared to reactors operating on the date of en-  
9       actment of the Clean Economy Jobs and Inno-  
10      vation Act—

11              “(i) are economically competitive with  
12              other electric power generation plants;

13              “(ii) have higher efficiency, lower cost,  
14              less environmental impacts, increased resil-  
15              ience, and improved safety;

16              “(iii) use fuels that are proliferation-  
17              resistant and have reduced production of  
18              high-level waste per unit of output; and

19              “(iv) use advanced instrumentation  
20              and monitoring systems;

21              “(B) consult with the Nuclear Regulatory  
22              Commission on appropriate metrics to consider  
23              for the criteria specified in subparagraph (A);

24              “(C) support research and development to  
25              resolve materials challenges relating to extreme

1 environments, including environments that con-  
2 tain high levels of—

3 “(i) radiation fluence;

4 “(ii) temperature;

5 “(iii) pressure; and

6 “(iv) corrosion;

7 “(D) support research and development to  
8 aid in the qualification of advanced fuels, in-  
9 cluding fabrication techniques;

10 “(E) support activities that address near-  
11 term challenges in modeling and simulation to  
12 enable accelerated design of and licensing of ad-  
13 vanced nuclear reactors, including the identi-  
14 fication of tools and methodologies for vali-  
15 dating such modeling and simulation efforts;

16 “(F) develop technologies, including tech-  
17 nologies to manage, reduce, or reuse nuclear  
18 waste;

19 “(G) ensure that nuclear research infra-  
20 structure is maintained or constructed, includ-  
21 ing—

22 “(i) currently operational research re-  
23 actors at the National Laboratories and in-  
24 stitutions of higher education;

25 “(ii) hot cell research facilities;

1 “(iii) a versatile fast neutron source;

2 and

3 “(iv) advanced coolant testing facili-

4 ties, including coolants such as lead, so-

5 dium, gas, and molten salt;

6 “(H) improve scientific understanding of

7 nonlight water coolant physics and chemistry;

8 “(I) develop advanced sensors and control

9 systems, including the identification of tools

10 and methodologies for validating such sensors

11 and systems;

12 “(J) investigate advanced manufacturing

13 and advanced construction techniques and ma-

14 terials to reduce the cost of advanced nuclear

15 reactors, including the use of digital twins and

16 of strategies to implement project and construc-

17 tion management best practices, and study the

18 effects of radiation and corrosion on materials

19 created with these techniques;

20 “(K) consult with the Administrator of the

21 National Nuclear Security Administration to in-

22 tegrate reactor safeguards and security into de-

23 sign;

24 “(L) support efforts to reduce any tech-

25 nical barriers that would prevent commercial

1 application of advanced nuclear energy systems;  
2 and

3 “(M) develop various safety analyses and  
4 emergency preparedness and response meth-  
5 odologies.

6 “(3) COORDINATION.—The Secretary shall co-  
7 ordinate with individuals engaged in the private sec-  
8 tor and individuals who are experts in nuclear non-  
9 proliferation, environmental and public health and  
10 safety, and economics to advance the development of  
11 various designs of advanced nuclear reactors.

12 “(4) AUTHORIZATION OF APPROPRIATIONS.—  
13 There are authorized to be appropriated to the Sec-  
14 retary to carry out the program under this sub-  
15 section \$55,000,000 for each of fiscal years 2021  
16 through 2025.

17 “(c) NUCLEAR HYBRID ENERGY SYSTEMS RE-  
18 SEARCH, DEVELOPMENT, DEMONSTRATION, AND COM-  
19 Mercial APPLICATION PROGRAM.—

20 “(1) IN GENERAL.—The Secretary shall carry  
21 out a program of research, development, demonstra-  
22 tion, and commercial application to develop nuclear  
23 hybrid energy systems, composed of 2 or more co-  
24 located or jointly operated subsystems of energy gen-  
25 eration, energy storage, or other technologies and in

1       which not less than 1 such subsystem is a nuclear  
2       energy system, to reduce greenhouse gas emissions  
3       in both the power and nonpower sectors.

4           “(2) COORDINATION.—In carrying out the pro-  
5       gram under paragraph (1), the Secretary shall co-  
6       ordinate with relevant program offices within the  
7       Department of Energy.

8           “(3) FOCUS AREAS.—The program under para-  
9       graph (1) may include research, development, dem-  
10      onstration, or commercial application of nuclear hy-  
11      brid energy systems with respect to—

12           “(A) desalination of water;

13           “(B) hydrogen or other liquid and gaseous  
14      fuel or chemical production;

15           “(C) heat for industrial processes;

16           “(D) district heating;

17           “(E) heat or electricity generation and  
18      storage;

19           “(F) carbon capture, use, utilization, and  
20      storage;

21           “(G) microgrid or island applications;

22           “(H) integrated systems modeling, anal-  
23      ysis, and optimization, inclusive of different  
24      configurations of hybrid energy systems; and



1 “(I) integrated design, planning, building,  
2 and operation of systems with existing infra-  
3 structure, including interconnection require-  
4 ments with the electric grid, as appropriate.

5 “(4) AUTHORIZATION OF APPROPRIATIONS.—  
6 There are authorized to be appropriated to the Sec-  
7 retary to carry out the program under this sub-  
8 section—

9 “(A) \$52,500,000 for fiscal year 2021;

10 “(B) \$55,125,000 for fiscal year 2022;

11 “(C) \$57,881,250 for fiscal year 2023;

12 “(D) \$60,775,313 for fiscal year 2024;

13 and

14 “(E) \$63,814,078 for fiscal year 2025.”.

15 (b) FUEL CYCLE RESEARCH AND DEVELOPMENT.—

16 Section 953 of the Energy Policy Act of 2005 (42 U.S.C.  
17 16273) is amended to read as follows:

18 **“SEC. 953. FUEL CYCLE RESEARCH, DEVELOPMENT, DEM-**  
19 **ONSTRATION, AND COMMERCIAL APPLICA-**  
20 **TION.**

21 “(a) USED NUCLEAR FUEL RESEARCH, DEVELOP-  
22 MENT, DEMONSTRATION, AND COMMERCIAL APPLICA-  
23 TION.—

24 “(1) IN GENERAL.—The Secretary shall con-  
25 duct an advanced fuel cycle research, development,

1 demonstration, and commercial application program  
2 that improves fuel cycle performance and supports a  
3 variety of options for used nuclear fuel storage, use,  
4 and disposal, including advanced nuclear reactor and  
5 non-reactor concepts (such as radioisotope power  
6 systems), while minimizing environmental and public  
7 health and safety impacts, including—

8 “(A) dry cask storage;

9 “(B) consolidated interim storage;

10 “(C) deep geological storage and disposal,  
11 including mined repository, and other tech-  
12 nologies;

13 “(D) used nuclear fuel transportation;

14 “(E) integrated waste management sys-  
15 tems;

16 “(F) vitrification;

17 “(G) fuel recycling and transmutation  
18 technologies, including advanced reprocessing  
19 technologies such as electrochemical and molten  
20 salt technologies, and advanced redox extraction  
21 technologies;

22 “(H) advanced materials to be used in sub-  
23 paragraphs (A) through (G); and

24 “(I) other areas as determined by the Sec-  
25 retary.

1           “(2) REQUIREMENTS.—In carrying out the pro-  
2           gram under this subsection, the Secretary shall—

3                   “(A) ensure all activities and designs in-  
4                   corporate state of the art safeguards tech-  
5                   nologies and techniques to reduce risk of pro-  
6                   liferation;

7                   “(B) consult with the Administrator of the  
8                   National Nuclear Security Administration to in-  
9                   tegrate safeguards and security by design;

10                  “(C) consider the potential benefits and  
11                  other impacts of those activities for civilian nu-  
12                  clear applications, environmental health and  
13                  safety, and national security, including consid-  
14                  eration of public consent; and

15                  “(D) consider the economic viability of all  
16                  activities and designs.

17           “(3) AUTHORIZATION OF APPROPRIATIONS.—  
18           There are authorized to be appropriated to the Sec-  
19           retary to carry out the program under this sub-  
20           section—

21                   “(A) \$91,875,000 for fiscal year 2021;

22                   “(B) \$96,468,750 for fiscal year 2022;

23                   “(C) \$101,292,188 for fiscal year 2023;

24                   “(D) \$106,356,797 for fiscal year 2024;

25                   and

1 “(E) \$111,674,637 for fiscal year 2025.

2 “(b) ADVANCED FUELS.—

3 “(1) IN GENERAL.—The Secretary shall con-  
4 duct an advanced fuels research, development, dem-  
5 onstration, and commercial application program on  
6 next-generation light water reactor and advanced re-  
7 actor fuels that demonstrate the potential for im-  
8 proved—

9 “(A) performance;

10 “(B) accident tolerance;

11 “(C) proliferation resistance;

12 “(D) use of resources;

13 “(E) environmental impact; and

14 “(F) economics.

15 “(2) REQUIREMENTS.—In carrying out the pro-  
16 gram under this subsection, the Secretary shall—

17 “(A) focus on the development of advanced  
18 technology fuels, including fabrication tech-  
19 niques, that offer improved accident-tolerance  
20 and economic performance with the goal of ini-  
21 tial commercial application by December 31,  
22 2025; and

23 “(B) cooperate with private industry and  
24 with institutions of higher education through

1 the Nuclear Energy University and Integrated  
2 Research Projects programs of the Department.

3 “(3) REPORT.—Not later than 180 days after  
4 the date of enactment of this section, the Secretary  
5 shall submit to the Committee on Science, Space,  
6 and Technology of the House of Representatives and  
7 the Committee on Energy and Natural Resources of  
8 the Senate a report that describes how the tech-  
9 nologies and concepts studied under this program  
10 would impact reactor economics, the fuel cycle, oper-  
11 ations, safety, proliferation, and the environment.

12 “(4) AUTHORIZATION OF APPROPRIATIONS.—  
13 There are authorized to be appropriated to the Sec-  
14 retary to carry out the program under this sub-  
15 section—

16 “(A) \$133,000,000 for fiscal year 2021;

17 “(B) \$139,650,000 for fiscal year 2022;

18 “(C) \$146,632,500 for fiscal year 2023;

19 “(D) \$153,964,125 for fiscal year 2024;

20 and

21 “(E) \$161,662,331 for fiscal year 2025.”.

22 (c) NUCLEAR SCIENCE AND ENGINEERING SUP-  
23 PORT.—Section 954 of the Energy Policy Act of 2005 (42  
24 U.S.C. 16274) is amended—

1 (1) in the section heading, by striking “**UNI-**  
2 **VERSITY NUCLEAR**” and inserting “**NUCLEAR**”;

3 (2) in subsection (b)—

4 (A) in the matter preceding paragraph (1),  
5 by striking “this section” and inserting “this  
6 subsection”; and

7 (B) by redesignating paragraphs (1)  
8 through (5) as subparagraphs (A) through (E),  
9 respectively, and indenting appropriately;

10 (3) in subsection (c), by redesignating para-  
11 graphs (1) and (2) as subparagraphs (A) and (B),  
12 respectively, and indenting appropriately;

13 (4) in subsection (d)—

14 (A) in the matter preceding paragraph (1),  
15 by striking “this section” and inserting “this  
16 subsection”; and

17 (B) by redesignating paragraphs (1)  
18 through (4) as subparagraphs (A) through (D),  
19 respectively, and indenting appropriately;

20 (5) in subsection (e), by striking “this section”  
21 and inserting “this subsection”;

22 (6) in subsection (f)—

23 (A) by striking “this section” and inserting  
24 “this subsection”; and

1 (B) by striking “subsection (b)(2)” and in-  
2 serting “paragraph (2)(B)”;

3 (7) by redesignating subsections (a) through (d)  
4 as paragraphs (1) through (4), respectively, and in-  
5 denting appropriately;

6 (8) by redesignating subsections (e) and (f) as  
7 paragraphs (7) and (8), respectively;

8 (9) by inserting after paragraph (4) (as so re-  
9 designated) the following:

10 “(5) RADIOLOGICAL FACILITIES MANAGE-  
11 MENT.—

12 “(A) IN GENERAL.—The Secretary shall  
13 carry out a program under which the Secretary  
14 shall provide project management, technical  
15 support, quality engineering and inspection, and  
16 nuclear material handling support to research  
17 reactors located at universities.

18 “(B) AUTHORIZATION OF APPROPRIA-  
19 TIONS.—Of any amounts appropriated to carry  
20 out the program under this subsection, there  
21 are authorized to be appropriated to the Sec-  
22 retary to carry out the program under this  
23 paragraph \$20,000,000 for each of fiscal years  
24 2021 through 2030.

1 “(6) NUCLEAR ENERGY UNIVERSITY PRO-  
2 GRAM.—In carrying out the programs under this  
3 section, the Department shall allocate 20 percent of  
4 funds appropriated to nuclear energy research and  
5 development programs annually to fund university-  
6 led research and university infrastructure projects  
7 through an open, competitive solicitation process.”;

8 (10) by inserting before paragraph (1) (as so  
9 redesignated) the following:

10 “(a) UNIVERSITY NUCLEAR SCIENCE AND ENGI-  
11 NEERING SUPPORT.—”; and

12 (11) by adding at the end the following:

13 “(b) NUCLEAR ENERGY APPRENTICESHIP SUBPRO-  
14 GRAM.—

15 “(1) ESTABLISHMENT.—In carrying out the  
16 program under subsection (a), the Secretary shall  
17 establish a nuclear energy apprenticeship subpro-  
18 gram under which the Secretary shall competitively  
19 award traineeships and apprenticeships in coordina-  
20 tion with universities to provide focused, advanced  
21 training to meet critical mission needs of the De-  
22 partment, including in industries that are rep-  
23 resented by skilled labor unions.

24 “(2) REQUIREMENTS.—In carrying out the sub-  
25 program under this subsection, the Secretary shall—



“(A) encourage appropriate partnerships among National Laboratories, affected universities, and industry; and

“(B) on an annual basis, evaluate the needs of the nuclear energy community to implement traineeships for focused topical areas addressing mission-specific workforce needs.

8 “(3) AUTHORIZATION OF APPROPRIATIONS.—  
9 There are authorized to be appropriated to the Sec-  
10 retary to carry out the subprogram under this sub-  
11 section \$5,000,000 for each of fiscal years 2021  
12 through 2030.”.

(d) CONFORMING AMENDMENT.—The table of contents of the Energy Policy Act of 2005 (Public Law 109–58; 119 Stat. 600) is amended by striking the items relating to sections 952 through 954 and inserting the following:

“Sec. 952. Reactor concepts research, development, demonstration, and commercial application.

“Sec. 953. Fuel cycle research, development, demonstration, and commercial application

“Sec. 954. Nuclear science and engineering support.”.

(e) UNIVERSITY NUCLEAR LEADERSHIP PROGRAM.—Section 313 of the Omnibus Appropriations Act, 2009 (42 U.S.C. 16274a), is amended to read as follows:

21 “SEC. 313. UNIVERSITY NUCLEAR LEADERSHIP PROGRAM.

22       “(a) IN GENERAL.—In carrying out section 954 of  
23 the Energy Policy Act of 2005 (42 U.S.C. 16274), the

1 Secretary of Energy shall support a program to be known  
2 as the University Nuclear Leadership Program (in this  
3 section referred to as the ‘Program’).

4 “(b) USE OF FUNDS.—

5 “(1) IN GENERAL.—Except as provided in para-  
6 graph (2), amounts made available to carry out the  
7 Program shall be used to provide financial assistance  
8 for scholarships, fellowships, and research and devel-  
9 opment projects at institutions of higher education  
10 with respect to research, development, demonstra-  
11 tion, and commercial application activities relevant  
12 to civilian advanced nuclear reactors including, but  
13 not limited to—

14 “(A) relevant fuel cycle technologies;

15 “(B) project management; and

16 “(C) advanced construction, manufac-  
17 turing, and fabrication methods.

18 “(2) EXCEPTION.—Notwithstanding paragraph  
19 (1), amounts made available to carry out the Pro-  
20 gram may be used to provide financial assistance for  
21 a scholarship, fellowship, or multiyear research and  
22 development project that does not align directly with  
23 a programmatic mission of the Department of En-  
24 ergy, if the activity for which assistance is provided

1 would facilitate the maintenance of the discipline of  
2 nuclear science or nuclear engineering.

3 “(c) AUTHORIZATION OF APPROPRIATIONS.—There  
4 are authorized to be appropriated \$15,000,000 to the Sec-  
5 retary of Energy to carry out the Program for each of  
6 fiscal years 2021 through 2030.”.

7 (f) VERSATILE NEUTRON SOURCE.—Section 955(c)  
8 of the Energy Policy Act of 2005 (42 U.S.C. 16275(c))  
9 is amended—

10 (1) in paragraph (1)—

11 (A) in the paragraph heading, by striking  
12 “MISSION NEED” and inserting “AUTHOR-  
13 IZATION”; and

14 (B) in subparagraph (A), by striking “de-  
15 termine the mission need” and inserting “pro-  
16 vide”; and

17 (2) by adding at the end the following:

18 “(7) AUTHORIZATION OF APPROPRIATIONS.—

19 There are authorized to be appropriated to the Sec-  
20 retary to carry out to completion the construction of  
21 the facility under this section—

22 “(A) \$300,000,000 for fiscal year 2021;

23 “(B) \$550,000,000 for fiscal year 2022;

24 “(C) \$638,000,000 for fiscal year 2023;

1 “(D) \$765,000,000 for fiscal year 2024;

2 and

3 “(E) \$763,000,000 for fiscal year 2025.”.

4 (g) ADVANCED NUCLEAR REACTOR RESEARCH, DE-  
5 VELOPMENT, AND DEMONSTRATION PROGRAM.—

6 (1) IN GENERAL.—Subtitle E of title IX of the  
7 Energy Policy Act of 2005 (42 U.S.C. 16271 et  
8 seq.) is amended by adding at the end the following:

9 **“SEC. 959A. ADVANCED NUCLEAR REACTOR RESEARCH, DE-**  
10 **VELOPMENT, DEMONSTRATION, AND COM-**  
11 **MERCIAL APPLICATION PROGRAM.**

12 “(a) DEMONSTRATION PROJECT DEFINED.—For the  
13 purposes of this section, the term ‘demonstration project’  
14 means—

15 “(1) an advanced nuclear reactor operated for  
16 the purpose of demonstrating the suitability for com-  
17 mercial application of the advanced nuclear reac-  
18 tor—

19 “(A) as part of the power generation facili-  
20 ties of an electric utility system; or

21 “(B) in any other manner; or

22 “(2) the operation of one or more experimental  
23 advanced nuclear reactors, for the purpose of dem-  
24 onstrating the suitability for commercial application  
25 of such advanced nuclear reactors.

1       “(b) ESTABLISHMENT.—The Secretary shall estab-  
2       lish a program to advance the research, development, dem-  
3       onstration, and commercial application of domestic ad-  
4       vanced, affordable, nuclear energy technologies by—

5               “(1) demonstrating a variety of advanced nu-  
6       clear reactor technologies that could be used to  
7       produce—

8               “(A) safer, emissions-free power at a lower  
9       cost compared to reactors operating on the date  
10       of enactment of the Clean Economy Jobs and  
11       Innovation Act;

12              “(B) heat for community heating, indus-  
13       trial purposes, heat storage, or synthetic fuel  
14       production;

15              “(C) remote or off-grid energy supply; or

16              “(D) backup or mission-critical power sup-  
17       plies;

18              “(2) identifying research areas that the private  
19       sector is unable or unwilling to undertake due to the  
20       cost of, or risks associated with, the research; and

21              “(3) facilitating the access of the private sec-  
22       tor—

23              “(A) to Federal research facilities and per-  
24       sonnel; and

1                   “(B) to the results of research relating to  
2                   civil nuclear technology funded by the Federal  
3                   Government.

4           “(c) DEMONSTRATION PROJECTS.—In carrying out  
5 demonstration projects under the program established in  
6 subsection (b), the Secretary shall—

7                   “(1) include, as an evaluation criterion, diver-  
8                   sity in designs for the advanced nuclear reactors  
9                   demonstrated under this section, including designs  
10                  using various—

11                           “(A) primary coolants;

12                           “(B) fuel types and compositions; and

13                           “(C) neutron spectra;

14                   “(2) consider, as an evaluation criterion, the  
15 likelihood that the operating cost for future commer-  
16 cial units for each design implemented through a  
17 demonstration project under this subsection is cost-  
18 competitive in the applicable market, including those  
19 designs configured as hybrid energy systems as de-  
20 scribed in section 952(c);

21                   “(3) ensure that each evaluation of candidate  
22 technologies for the demonstration projects is com-  
23 pleted through an external review of proposed de-  
24 signs, which review shall—

1           “(A) be conducted by a panel that includes  
2           not fewer than 1 representative that does not  
3           have a conflict of interest of each of—

4                   “(i) an electric utility;

5                   “(ii) an entity that uses high-tempera-  
6                   ture process heat for manufacturing or in-  
7                   dustrial processing, such as a petro-  
8                   chemical or synthetic fuel company, a man-  
9                   ufacturer of metals or chemicals, or a man-  
10                  ufacturer of concrete;

11                  “(iii) an expert from the investment  
12                  community;

13                  “(iv) a project management practi-  
14                  tioner; and

15                  “(v) an environmental health and  
16                  safety expert; and

17           “(B) include a review of each demonstra-  
18           tion project under this subsection which shall  
19           include consideration of cost-competitiveness  
20           and other value streams, together with the tech-  
21           nology readiness level, the technical abilities  
22           and qualifications of teams desiring to dem-  
23           onstrate a proposed advanced nuclear reactor  
24           technology, the capacity to meet cost-share re-

1           quirements of the Department, if Federal fund-  
2           ing is provided, and environmental impacts;

3           “(4) for federally funded demonstration  
4           projects, enter into cost-sharing agreements with  
5           private sector partners in accordance with section  
6           988 for the conduct of activities relating to the re-  
7           search, development, and demonstration of advanced  
8           nuclear reactor designs under the program;

9           “(5) consult with—

10           “(A) National Laboratories;

11           “(B) institutions of higher education;

12           “(C) traditional end users (such as electric  
13           utilities);

14           “(D) potential end users of new tech-  
15           nologies (such as users of high-temperature  
16           process heat for manufacturing processing, in-  
17           cluding petrochemical or synthetic fuel compa-  
18           nies, manufacturers of metals or chemicals, or  
19           manufacturers of concrete);

20           “(E) developers of advanced nuclear reac-  
21           tor technology;

22           “(F) environmental and public health and  
23           safety experts; and

24           “(G) non-proliferation experts;



1           “(6) seek to ensure that the demonstration  
2       projects carried out under this section do not cause  
3       any delay in the progress of an advanced reactor  
4       project by private industry and the Department of  
5       Energy that is underway as of the date of enactment  
6       of this section;

7           “(7) establish a streamlined approval process  
8       for expedited contracting between awardees and the  
9       Department;

10          “(8) identify technical challenges to candidate  
11       technologies;

12          “(9) support near-term research and develop-  
13       ment to address the highest risk technical challenges  
14       to the successful demonstration of a selected ad-  
15       vanced reactor technology, in accordance with—

16               “(A) paragraph (8);

17               “(B) the research and development activi-  
18       ties under section 952(b); and

19               “(C) the research and development activi-  
20       ties under section 958; and

21          “(10) establish such technology advisory work-  
22       ing groups as the Secretary determines to be appro-  
23       priate to advise the Secretary regarding the tech-  
24       nical challenges identified under paragraph (8) and  
25       the scope of research and development programs to

1 address the challenges, in accordance with para-  
2 graph (9), to be comprised of—

3 “(A) private sector advanced nuclear reac-  
4 tor technology developers;

5 “(B) technical experts with respect to the  
6 relevant technologies at institutions of higher  
7 education;

8 “(C) technical experts at the National  
9 Laboratories;

10 “(D) environmental and public health and  
11 safety experts;

12 “(E) non-proliferation experts; and

13 “(F) any other entities the Secretary de-  
14 termines appropriate.

15 “(d) NONDUPLICATION.—Entities may not receive  
16 funds under this program if receiving funds from another  
17 reactor demonstration program at the Department in the  
18 same fiscal year.

19 “(e) AUTHORIZATION OF APPROPRIATIONS.—There  
20 are authorized to be appropriated to the Secretary to carry  
21 out the program under this subsection—

22 “(1) \$530,000,000 for fiscal year 2021;

23 “(2) \$680,000,000 for fiscal year 2022;

24 “(3) \$680,000,000 for fiscal year 2023;

25 “(4) \$680,000,000 for fiscal year 2024; and

1 “(5) \$680,000,000 for fiscal year 2025.”.

2 (2) TABLE OF CONTENTS.—The table of con-  
3 tents of the Energy Policy Act of 2005 (Public Law  
4 109–58; 119 Stat. 594) is amended—

5 (A) in the items relating to sections 957,  
6 958, and 959, by inserting “Sec.” before “9”  
7 each place it appears; and

8 (B) by inserting after the item relating to  
9 section 959 the following:

“Sec. 959A. Advanced nuclear reactor research, development, demonstration,  
and commercial application program.”.

10 (h) INTERNATIONAL NUCLEAR ENERGY COOPERA-  
11 TION.—

12 (1) IN GENERAL.—Subtitle E of title IX of the  
13 Energy Policy Act of 2005 (42 U.S.C. 16271 et  
14 seq.), as amended by subsection (g), is further  
15 amended by adding at the end the following:

16 **“SEC. 959B. INTERNATIONAL NUCLEAR ENERGY COOPERA-**  
17 **TION.**

18 “(a) IN GENERAL.—The Secretary, in consultation  
19 with international regulators, shall carry out a program—

20 “(1) to coordinate international efforts with re-  
21 spect to research, development, demonstration, and  
22 commercial application of nuclear technology that  
23 supports diplomatic, nonproliferation, climate, and

1 international economic objectives for the safe, se-  
2 cure, and peaceful use of such technology; and

3 “(2) to develop collaboration initiatives with re-  
4 spect to such efforts with a variety of countries  
5 through—

6 “(A) research and development agree-  
7 ments;

8 “(B) the development of coordinated action  
9 plans; and

10 “(C) new or existing multilateral coopera-  
11 tion commitments including—

12 “(i) the International Framework for  
13 Nuclear Energy Cooperation;

14 “(ii) the Generation IV International  
15 Forum;

16 “(iii) the International Atomic Energy  
17 Agency;

18 “(iv) the Organization for Economic  
19 Co-operation and Development Nuclear  
20 Energy Agency; and

21 “(v) any other international collabo-  
22 rative effort with respect to advanced nu-  
23 clear reactor operations and safety.

24 “(b) REQUIREMENTS.—The program under sub-  
25 section (a) shall be carried out to facilitate, to the max-

1 imum extent practicable, workshops and expert-based ex-  
2 changes to engage industry, stakeholders, and foreign gov-  
3 ernments regarding international civil nuclear issues, such  
4 as training, financing, safety, and options for multi-  
5 national cooperation on used nuclear fuel disposal.”.

6 (2) TABLE OF CONTENTS.—The table of con-  
7 tents of the Energy Policy Act of 2005 (Public Law  
8 109–58; 119 Stat. 594), as amended by subsection  
9 (g), is further amended by inserting after the item  
10 relating to section 959A the following:

“Sec. 959B. International nuclear energy cooperation.”.

11 **SEC. 4203. NUCLEAR ENERGY BUDGET PLAN.**

12 Section 959 of the Energy Policy Act of 2005 (42  
13 U.S.C. 16279) is amended—

14 (1) by amending subsection (b) to read as fol-  
15 lows:

16 “(b) BUDGET PLAN ALTERNATIVE 1.—One of the  
17 budget plans submitted under subsection (a) shall assume  
18 constant annual funding for 10 years at the appropriated  
19 level for the current fiscal year for the civilian nuclear en-  
20 ergy research and development of the Department.”; and

21 (2) by inserting after subsection (d) the fol-  
22 lowing:

23 “(e) UPDATES.—Not less frequently than once every  
24 2 years, the Secretary shall submit to the Committee on  
25 Science, Space, and Technology of the House of Rep-

1 representatives and the Committee on Energy and Natural  
2 Resources of the Senate updated 10-year budget plans  
3 which shall identify, and provide a justification for, any  
4 major deviation from a previous budget plan submitted  
5 under this section.”.

6 **SEC. 4204. ORGANIZATION AND ADMINISTRATION OF PRO-**  
7 **GRAMS.**

8 (a) IN GENERAL.—Subtitle E of title IX of the En-  
9 ergy Policy Act of 2005 (42 U.S.C. 16271 et seq.), as  
10 amended by this Act, is further amended by adding at the  
11 end of the following:

12 **“SEC. 959C. ORGANIZATION AND ADMINISTRATION OF PRO-**  
13 **GRAMS.**

14 “(a) COORDINATION.—In carrying out this subtitle,  
15 the Secretary shall coordinate activities, and effectively  
16 manage crosscutting research priorities across programs  
17 of the Department and other relevant Federal agencies,  
18 including the National Laboratories.

19 “(b) COLLABORATION.—

20 “(1) IN GENERAL.—In carrying out this sub-  
21 title, the Secretary shall collaborate with industry,  
22 National Laboratories, other relevant Federal agen-  
23 cies, institutions of higher education, including mi-  
24 nority-serving institutions and research reactors,  
25 Tribal entities, including Alaska Native Corpora-

1        tions, and international bodies with relevant sci-  
2        entific and technical expertise.

3            “(2) PARTICIPATION.—To the extent prac-  
4        ticable, the Secretary shall encourage research  
5        projects that promote collaboration between entities  
6        specified in paragraph (1).

7            “(c) DISSEMINATION OF RESULTS AND PUBLIC  
8        AVAILABILITY.—The Secretary shall, except to the extent  
9        protected from disclosure under section 552(b) of title 5,  
10       United States Code, publish the results of projects sup-  
11       ported under this subtitle through Department websites,  
12       reports, databases, training materials, and industry con-  
13       ferences, including information discovered after the com-  
14       pletion of such projects.

15           “(d) EDUCATION AND OUTREACH.—In carrying out  
16       the activities described in this subtitle, the Secretary shall  
17       support education and outreach activities to disseminate  
18       information and promote public understanding of nuclear  
19       energy.

20           “(e) TECHNICAL ASSISTANCE.—In carrying out this  
21       subtitle, for the purposes of supporting technical, non-  
22       hardware, and information-based advances in nuclear en-  
23       ergy development and operations, the Secretary shall also  
24       conduct technical assistance and analysis activities, includ-

1 ing activities that support commercial application of nu-  
2 clear energy in rural, Tribal, and low-income communities.

3 “(f) PROGRAM REVIEW.—At least annually, all pro-  
4 grams in this subtitle shall be subject to an annual review  
5 by the Nuclear Energy Advisory Committee of the Depart-  
6 ment or other independent entity, as appropriate.

7 “(g) SENSITIVE INFORMATION.—The Secretary shall  
8 not publish any information generated under this subtitle  
9 that is detrimental to national security, as determined by  
10 the Secretary.”.

11 (b) TABLE OF CONTENTS.—The table of contents of  
12 the Energy Policy Act of 2005 (Public Law 109–58; 119  
13 Stat. 594), as amended by this Act, is further amended  
14 by inserting after the item relating to section 959B the  
15 following:

“Sec. 959C. Organization and administration of programs.”.

16 **TITLE V—ELECTRIC GRID AND**  
17 **CYBERSECURITY**

18 **Subtitle A—Electric Grid**

19 **PART 1—21ST CENTURY POWER GRID**

20 **SEC. 5101. 21ST CENTURY POWER GRID.**

21 (a) IN GENERAL.—The Secretary of Energy shall es-  
22 tablish a program to provide financial assistance to eligible  
23 partnerships to carry out projects related to the mod-  
24 ernization of the electric grid, including—



1           (1) projects for the deployment of technologies  
2           to improve monitoring of, advanced controls for, and  
3           prediction of performance of, a distribution system;  
4           and

5           (2) projects related to transmission system  
6           planning and operation.

7           (b) ELIGIBLE PROJECTS.—Projects for which an eli-  
8           gible partnership may receive financial assistance under  
9           subsection (a)—

10           (1) shall be designed to improve the resiliency,  
11           performance, or efficiency of the electric grid, while  
12           ensuring the continued provision of safe, secure, reli-  
13           able, and affordable power;

14           (2) may be designed to deploy a new product or  
15           technology that could be used by customers of an  
16           electric utility; and

17           (3) shall demonstrate—

18           (A) secure integration and management of  
19           energy resources, including through distributed  
20           energy generation, combined heat and power,  
21           microgrids, energy storage, electric vehicles, en-  
22           ergy efficiency, demand response, or control-  
23           lable loads; or

1 (B) secure integration and interoperability  
2 of communications and information technologies  
3 related to the electric grid.

4 (c) CYBERSECURITY PLAN.—Each project carried  
5 out with financial assistance provided under subsection (a)  
6 shall include the development of a cybersecurity plan writ-  
7 ten in accordance with guidelines developed by the Sec-  
8 retary of Energy.

9 (d) PRIVACY EFFECTS ANALYSIS.—Each project car-  
10 ried out with financial assistance provided under sub-  
11 section (a) shall include a privacy effects analysis that  
12 evaluates the project in accordance with the Voluntary  
13 Code of Conduct of the Department of Energy, commonly  
14 known as the “DataGuard Energy Data Privacy Pro-  
15 gram”, or the most recent revisions to the privacy pro-  
16 gram of the Department.

17 (e) DEFINITIONS.—In this section:

18 (1) ELIGIBLE PARTNERSHIP.—The term “eligi-  
19 ble partnership” means a partnership consisting of  
20 two or more entities, which—

21 (A) may include—

- 22 (i) any institution of higher education;  
23 (ii) a National Laboratory;

1 (iii) a State, territory, or a local gov-  
2 ernment or other public body created by or  
3 pursuant to State law;

4 (iv) an Indian Tribe;

5 (v) a Federal power marketing admin-  
6 istration; or

7 (vi) an entity that develops and pro-  
8 vides technology; and

9 (B) shall include at least one of any of—

10 (i) an electric utility;

11 (ii) a Regional Transmission Organi-  
12 zation; or

13 (iii) an Independent System Operator.

14 (2) ELECTRIC UTILITY.—The term “electric  
15 utility” has the meaning given that term in section  
16 3(22) of the Federal Power Act (16 U.S.C.  
17 796(22)), except that such term does not include an  
18 entity described in subparagraph (B) of such sec-  
19 tion.

20 (3) FEDERAL POWER MARKETING ADMINISTRA-  
21 TION.—The term “Federal power marketing admin-  
22 istration” means the Bonneville Power Administra-  
23 tion, the Southeastern Power Administration, the  
24 Southwestern Power Administration, or the Western  
25 Area Power Administration.

1           (4) INDEPENDENT SYSTEM OPERATOR; RE-  
2           GIONAL TRANSMISSION ORGANIZATION.—The terms  
3           “Independent System Operator” and “Regional  
4           Transmission Organization” have the meanings  
5           given those terms in section 3 of the Federal Power  
6           Act (16 U.S.C. 796).

7           (5) INSTITUTION OF HIGHER EDUCATION.—The  
8           term “institution of higher education” has the  
9           meaning given that term in section 101(a) of the  
10          Higher Education Act of 1965 (20 U.S.C. 1001(a)).

11          (f) AUTHORIZATION OF APPROPRIATIONS.—There is  
12          authorized to be appropriated to the Secretary of Energy  
13          to carry out this section \$700,000,000 for each of fiscal  
14          years 2021 through 2025, to remain available until ex-  
15          pended.

16                   **PART 2—TRANSMISSION PLANNING**

17   **SEC. 5111. INTERREGIONAL TRANSMISSION PLANNING RE-**  
18                   **PORT.**

19          Not later than 6 months after the date of enactment  
20          of this Act, the Secretary of Energy shall submit to Con-  
21          gress a report that—

22                (1) examines the effectiveness of interregional  
23                transmission planning processes for identifying  
24                transmission projects across regions that provide  
25                economic, reliability, or operational benefits, taking

1       into consideration the public interest, the integrity of  
2       markets, and the protection of consumers;

3           (2) evaluates the current architecture of re-  
4       gional electricity grids (including international trans-  
5       mission connections of such grids) that together  
6       comprise the Nation's electricity grid, with respect  
7       to—

8           (A) potential growth in renewable energy  
9       generation, including energy generation from  
10      offshore wind;

11          (B) potential growth in electricity demand;  
12      and

13          (C) retirement of existing electricity gen-  
14      eration assets;

15      (3) analyzes—

16          (A) the range of benefits that interregional  
17      transmission provides;

18          (B) the impact of basing transmission  
19      project approvals on a comprehensive assess-  
20      ment of the multiple benefits provided;

21          (C) synchronization of processes described  
22      in paragraph (1) among neighboring regions;

23          (D) how often interregional transmission  
24      planning should be completed;

1 (E) whether voltage, size, or cost require-  
2 ments should be a factor in the approval of  
3 interregional transmission projects;

4 (F) cost allocation methodologies for inter-  
5 regional transmission projects; and

6 (G) current barriers and challenges to con-  
7 struction of interregional transmission projects;  
8 and

9 (4) identifies potential changes, based on the  
10 analysis under paragraph (3), to the processes de-  
11 scribed in paragraph (1) to ensure the most effi-  
12 cient, cost effective, and broadly beneficial trans-  
13 mission projects are selected for construction.

14 **SEC. 5112. INTERREGIONAL TRANSMISSION PLANNING**  
15 **RULEMAKING.**

16 (a) IN GENERAL.—Not later than 6 months after the  
17 date of the enactment of this section, the Federal Energy  
18 Regulatory Commission (hereinafter in this section re-  
19 ferred to as “the Commission”) shall initiate a rulemaking  
20 to increase the effectiveness of the interregional trans-  
21 mission planning process.

22 (b) ASSESSMENT.—In conducting the rulemaking  
23 under subsection (a), the Commission shall assess—

24 (1) the effectiveness of interregional trans-  
25 mission planning processes for identifying trans-

1 mission planning solutions that provide economic, re-  
2 liability, operation, and public policy benefits, taking  
3 into consideration—

4 (A) the public interest;

5 (B) the integrity of markets; and

6 (C) the protection of consumers; and

7 (2) proposed changes to the processes described  
8 in paragraph (1) to ensure that efficient, cost-effec-  
9 tive, and broadly beneficial transmission solutions  
10 are selected for construction, taking into consider-  
11 ation—

12 (A) the public interest;

13 (B) the integrity of markets;

14 (C) the protection of consumers; and

15 (D) the range of benefits that interregional  
16 transmission provides.

17 (c) EMPHASIS.—In conducting the rulemaking under  
18 subsection (a), the Commission shall develop rules that  
19 emphasize—

20 (1) the need for a solution to secure approval  
21 based on a comprehensive assessment of the multiple  
22 benefits the solution is expected to provide;

23 (2) that interregional benefit analyses made be-  
24 tween multiple regions should not be subject to reas-  
25 sessment by a single regional entity;

1           (3) the importance of synchronizing the plan-  
2           ning processes between regions that neighbor one  
3           another, including using one timeline with a single  
4           set of needs, input assumptions, and benefit metrics;

5           (4) that evaluation of long-term scenarios  
6           should align with the expected life of an inter-  
7           regional transmission solution;

8           (5) that transmission planning authorities  
9           should allow for the identification and joint evalua-  
10          tion between regions of alternative proposals;

11          (6) that the interregional transmission planning  
12          process should take place not less frequently than  
13          once every 3 years;

14          (7) the elimination of arbitrary voltage, size, or  
15          cost requirements for an interregional transmission  
16          solution; and

17          (8) cost allocation methodologies that reflect  
18          the multiple benefits provided by an interregional  
19          transmission solution.

20          (d) TIMING.—Not later than 18 months after the  
21          date of the enactment of this section, the Commission  
22          shall complete the rulemaking initiated under subsection  
23          (a).

24          (e) DEFINITIONS.—In this section:



1           (1) INTERREGIONAL BENEFIT ANALYSIS.—The  
2       term “interregional benefit analysis” means the  
3       identification and evaluation of the estimated bene-  
4       fits of interregional transmission facilities in two or  
5       more neighboring transmission planning regions to  
6       meet the needs for transmission system reliability,  
7       resilience, economic, and public policy requirements.

8           (2) INTERREGIONAL TRANSMISSION PLANNING  
9       PROCESS.—The term “interregional transmission  
10      planning process” means an evaluation of trans-  
11      mission needs established by public utility trans-  
12      mission providers in two or more neighboring trans-  
13      mission planning regions that are jointly evaluated  
14      by those regions.

15          (3) INTERREGIONAL TRANSMISSION SOLU-  
16      TION.—The term “interregional transmission solu-  
17      tion” means an interregional transmission facility  
18      that is evaluated by two or more neighboring trans-  
19      mission planning regions and determined by each of  
20      those regions for the ability of the project to effi-  
21      ciently or cost effectively meet regional transmission  
22      needs or to provide substantial benefits that are not  
23      addressed in either of the region’s regional planning  
24      processes.

1 (4) TRANSMISSION PLANNING AUTHORITY.—

2 The term “transmission planning authority” means  
3 the public utility transmission provider within a  
4 transmission planning region that is required to cre-  
5 ate a regional transmission plan that identifies  
6 transmission facilities and nontransmission alter-  
7 natives needed to meet regional needs.

8 (5) TRANSMISSION PLANNING REGIONS.—The  
9 term “transmission planning regions” means the  
10 transmission planning regions recognized by the  
11 Commission as compliant with the final rule entitled  
12 “Transmission Planning and Cost Allocation by  
13 Transmission Owning and Operating Public Utili-  
14 ties” located at part 35 of title 18, Code of Federal  
15 Regulations (or any successor regulation).

16 **Subtitle B—State Energy Security**  
17 **Plans**

18 **SEC. 5201. STATE ENERGY SECURITY PLANS.**

19 (a) IN GENERAL.—Part D of title III of the Energy  
20 Policy and Conservation Act (42 U.S.C. 6321 et seq.) is  
21 amended by adding at the end the following:

22 **“SEC. 367. STATE ENERGY SECURITY PLANS.**

23 “(a) IN GENERAL.—Federal financial assistance  
24 made available to a State under this part may be used  
25 for the implementation, review, and revision of a State en-

1 ergy security plan that assesses the State’s existing cir-  
2 cumstances and proposes methods to strengthen the abil-  
3 ity of the State, in consultation with owners and operators  
4 of energy infrastructure in such State, to—

5 “(1) secure the energy infrastructure of the  
6 State against all physical and cybersecurity threats;

7 “(2) mitigate the risk of energy supply disrup-  
8 tions to the State and enhance the response to, and  
9 recovery from, energy disruptions; and

10 “(3) ensure the State has a reliable, secure, and  
11 resilient energy infrastructure.

12 “(b) CONTENTS OF PLAN.—A State energy security  
13 plan described in subsection (a) shall—

14 “(1) address all fuels, including petroleum  
15 products, other liquid fuels, coal, electricity, and nat-  
16 ural gas, as well as regulated and unregulated en-  
17 ergy providers;

18 “(2) provide a State energy profile, including  
19 an assessment of energy production, distribution,  
20 and end-use;

21 “(3) address potential hazards to each energy  
22 sector or system, including physical threats and cy-  
23 bersecurity threats and vulnerabilities;

24 “(4) provide a risk assessment of energy infra-  
25 structure and cross-sector interdependencies;

1           “(5) provide a risk mitigation approach to en-  
2           hance reliability and end-use resilience; and

3           “(6) address multi-State, Indian Tribe, and re-  
4           gional coordination planning and response, and to  
5           the extent practicable, encourage mutual assistance  
6           in cyber and physical response plans.

7           “(c) COORDINATION.—In developing a State energy  
8           security plan under this section, the energy office of the  
9           State shall, to the extent practicable, coordinate with—

10           “(1) the public utility or service commission of  
11           the State;

12           “(2) energy providers from the private sector;  
13           and

14           “(3) other entities responsible for maintaining  
15           fuel or electric reliability.

16           “(d) FINANCIAL ASSISTANCE.—A State is not eligible  
17           to receive Federal financial assistance under this part, for  
18           any purpose, for a fiscal year unless the Governor of such  
19           State submits to the Secretary, with respect to such fiscal  
20           year—

21           “(1) a State energy security plan described in  
22           subsection (a) that meets the requirements of sub-  
23           section (b); or

24           “(2) after an annual review of the State energy  
25           security plan by the Governor—

1 “(A) any necessary revisions to such plan;

2 or

3 “(B) a certification that no revisions to

4 such plan are necessary.

5 “(e) TECHNICAL ASSISTANCE.—Upon request of the

6 Governor of a State, the Secretary may provide informa-

7 tion and technical assistance, and other assistance, in the

8 development, implementation, or revision of a State energy

9 security plan.

10 “(f) SUNSET.—This section shall expire on October

11 31, 2024.”.

12 (b) TECHNICAL AND CONFORMING AMENDMENTS.—

13 (1) CONFORMING AMENDMENTS.—Section 363

14 of the Energy Policy and Conservation Act (42

15 U.S.C. 6323) is amended—

16 (A) by redesignating subsection (f) as sub-

17 section (e); and

18 (B) by striking subsection (e).

19 (2) TECHNICAL AMENDMENT.—Section

20 366(3)(B)(i) of the Energy Policy and Conservation

21 Act (42 U.S.C. 6326(3)(B)(i)) is amended by strik-

22 ing “approved under section 367”.

23 (3) REFERENCE.—The item relating to “De-

24 partment of Energy—Energy Conservation” in title

25 II of the Department of the Interior and Related

1       Agencies Appropriations Act, 1985 (42 U.S.C.  
2       6323a) is amended by striking “sections 361  
3       through 366” and inserting “sections 361 through  
4       367”.

5           (4) TABLE OF SECTIONS.—The table of sections  
6       for part D of title III of the Energy Policy and Con-  
7       servation Act is amended by adding at the end the  
8       following:

“Sec. 367. State energy security plans.”.

9                   **Subtitle C—Research and**  
10                   **Development**

11                   **PART 1—BETTER ENERGY STORAGE**  
12                   **TECHNOLOGY**

13       **SEC. 5301. ENERGY STORAGE.**

14       (a) IN GENERAL.—The United States Energy Stor-  
15       age Competitiveness Act of 2007 (42 U.S.C. 17231) is  
16       amended—

17           (1) by redesignating subsections (l) through (p)  
18       as subsections (p) through (t), respectively; and

19           (2) by inserting after subsection (k) the fol-  
20       lowing:

21       “(l) ENERGY STORAGE RESEARCH AND DEVELOP-  
22       MENT PROGRAM.—

23           “(1) IN GENERAL.—Not later than 180 days  
24       after the date of enactment of this subsection, the  
25       Secretary shall establish a research and development

1       program for energy storage systems, components,  
2       and materials across multiple program offices of the  
3       Department.

4               “(2) REQUIREMENTS.—In carrying out the pro-  
5       gram under paragraph (1), the Secretary shall—

6               “(A) coordinate across all relevant pro-  
7       gram offices throughout the Department, in-  
8       cluding the Office of Electricity, the Office of  
9       Energy Efficiency and Renewable Energy, the  
10      Advanced Research Projects Agency – Energy,  
11      the Office of Science, and the Office of Cyberse-  
12      curity, Energy Security, and Emergency Re-  
13      sponse;

14              “(B) adopt long-term cost, performance,  
15      and demonstration targets for different types of  
16      energy storage systems and for use in a variety  
17      of regions, including rural areas;

18              “(C) incorporate considerations of sustain-  
19      ability, sourcing, recycling, reuse, and disposal  
20      of materials, including critical elements, in the  
21      design of energy storage systems;

22              “(D) identify energy storage duration  
23      needs;

1           “(E) analyze the need for various types of  
2           energy storage to improve electric grid resil-  
3           ience and reliability; and

4           “(F) support research and development of  
5           advanced manufacturing technologies that have  
6           the potential to improve United States competi-  
7           tiveness in energy storage manufacturing.

8           “(3) STRATEGIC PLAN.—

9           “(A) IN GENERAL.—No later than 180  
10          days after the date of enactment of this sub-  
11          section, the Secretary shall develop a 5-year  
12          strategic plan identifying research, development,  
13          demonstration, and commercial application  
14          goals for the program in accordance with this  
15          section. The Secretary shall submit this plan to  
16          the Committee on Science, Space, and Tech-  
17          nology of the House of Representatives and the  
18          Committee on Energy and Natural Resources of  
19          the Senate.

20          “(B) CONTENTS.—The strategic plan sub-  
21          mitted under subparagraph (A) shall—

22                 “(i) identify programs at the Depart-  
23                 ment related to energy storage systems  
24                 that support the research and development  
25                 activities described in paragraph (4), and



1 the demonstration projects under sub-  
2 section (m); and

3 “(ii) include timelines for the accom-  
4 plishment of goals developed under the  
5 plan.

6 “(C) UPDATES TO PLAN.—Not less fre-  
7 quently than once every 3 years, the Secretary  
8 shall submit to the Committee on Science,  
9 Space, and Technology of the House of Rep-  
10 resentatives and the Committee on Energy and  
11 Natural Resources of the Senate an updated  
12 version of the plan under subparagraph (A).

13 “(4) RESEARCH AND DEVELOPMENT.—In car-  
14 rying out the program established in paragraph (1),  
15 the Secretary shall focus on developing—

16 “(A) energy storage systems that can store  
17 energy and deliver stored energy for a minimum  
18 of 6 hours in duration to balance electricity  
19 needs over the course of a single day;

20 “(B) long-duration energy storage systems  
21 that can store energy and deliver stored energy  
22 for 10 to 100 hours in duration; and

23 “(C) energy storage systems that can store  
24 energy and deliver stored energy over several

1 months and address seasonal scale variations in  
2 supply and demand.

3 “(5) TESTING AND VALIDATION.—The Sec-  
4 retary shall support the standardized testing and  
5 validation of energy storage systems under the pro-  
6 gram through collaboration with 1 or more National  
7 Laboratories, including the development of meth-  
8 odologies to independently validate energy storage  
9 technologies by—

10 “(A) performance of energy storage sys-  
11 tems on the electric grid, including—

12 “(i) when appropriate, testing of ap-  
13 plication-driven charge and discharge pro-  
14 tocols;

15 “(ii) evaluation of power capacity and  
16 energy output;

17 “(iii) degradation of the energy stor-  
18 age systems from cycling and aging;

19 “(iv) safety; and

20 “(v) reliability testing under grid duty  
21 cycles; and

22 “(B) prediction of lifetime metrics.

23 “(6) COORDINATION.—In carrying out the pro-  
24 gram established in paragraph (1), the Secretary  
25 shall coordinate with—

1           “(A) programs and offices that aim to in-  
2           crease domestic manufacturing and production  
3           of energy storage systems, such as those within  
4           the Department and within the National Insti-  
5           tute of Standards and Technology;

6           “(B) other Federal agencies that are car-  
7           rying out initiatives to increase energy reli-  
8           ability through the development of energy stor-  
9           age systems, including the Department of De-  
10          fense; and

11          “(C) other stakeholders working to ad-  
12          vance the development of commercially viable  
13          energy storage systems.

14          “(7) TECHNICAL ASSISTANCE PROGRAM.—

15                 “(A) IN GENERAL.—The Secretary shall  
16                 provide technical assistance for commercial ap-  
17                 plication of energy storage technologies to eligi-  
18                 ble entities.

19                 “(B) TECHNICAL ASSISTANCE.—Technical  
20                 assistance provided under this paragraph—

21                         “(i) may include assistance with—

22                                 “(I) assessment of relevant tech-  
23                                 nical and geographic characteristics;

1 “(II) interconnection of elec-  
2 tricity storage systems with the elec-  
3 tric grid; and

4 “(III) engineering design; and

5 “(ii) may not include assistance relat-  
6 ing to modification of Federal, State, or  
7 local regulations or policies with respect to  
8 energy storage systems.

9 “(C) APPLICATIONS.—

10 “(i) IN GENERAL.—The Secretary  
11 shall seek applications for technical assist-  
12 ance under the program—

13 “(I) on a competitive basis; and

14 “(II) on a periodic basis, but not  
15 less frequently than once every 12  
16 months.

17 “(ii) PRIORITIES.—In selecting eligi-  
18 ble entities for technical assistance for  
19 commercial applications, the Secretary  
20 shall give priority to eligible entities with  
21 projects that have the greatest potential  
22 for—

23 “(I) strengthening the reliability  
24 and resilience of the electric grid to  
25 the impact of extreme weather events,

1 power grid failures, and interruptions  
2 in supply of electricity;  
3 “(II) reducing the cost of energy  
4 storage systems; or  
5 “(III) facilitating the use of net  
6 zero emission energy resources.

7 “(8) PROGRAM DEFINED.—In this subsection  
8 (except in paragraph (9)), the term ‘program’ means  
9 the research and development program established  
10 under paragraph (1).

11 “(9) TECHNICAL ASSISTANCE GRANT PRO-  
12 GRAM.—

13 “(A) IN GENERAL.—The Secretary shall  
14 establish a technical assistance grant program  
15 (referred to in this subsection as the ‘program’)  
16 to award grants to eligible entities so that enti-  
17 ties may seek technical assistance outside of the  
18 Department of Energy to identify, evaluate,  
19 plan, design, and develop processes to procure  
20 energy storage systems.

21 “(B) TECHNICAL ASSISTANCE.—

22 “(i) IN GENERAL.—Grants for tech-  
23 nical assistance may be used to obtain  
24 technical assistance with one or more of

1 the following activities relating to energy  
2 storage systems:

3 “(I) Identification of opportuni-  
4 ties to use energy storage systems.

5 “(II) Assessment of technical and  
6 economic characteristics.

7 “(III) Utility interconnection.

8 “(IV) Permitting and siting  
9 issues.

10 “(V) Business planning and fi-  
11 nancial analysis.

12 “(VI) Engineering design.

13 “(VII) Carrying out initial as-  
14 sessment to identify net system bene-  
15 fits of using energy storage systems.

16 “(VIII) Obtaining guidance relat-  
17 ing to methods to assess energy stor-  
18 age in long-term resource planning  
19 and resource procurement.

20 “(IX) Carrying out studies to as-  
21 sess the cost-benefit ratio of energy  
22 storage systems.

23 “(X) Obtaining guidance on com-  
24 plying with state and local regulatory

1 technical standards, including siting  
2 and permitting standards.

3 “(ii) EXCLUSION.—The grants for  
4 technical assistance described in subpara-  
5 graph (A) shall not be used for assistance  
6 relating to modification of Federal, State,  
7 or local regulations or policies relating to  
8 energy storage systems.

9 “(C) APPLICATIONS.—

10 “(i) IN GENERAL.—An eligible entity  
11 desiring grants for technical assistance  
12 under the program shall submit to the Sec-  
13 retary an application at such time, in such  
14 manner, and containing such information  
15 as the Secretary may require.

16 “(ii) APPLICATION PROCESS.—The  
17 Secretary shall seek applications for tech-  
18 nical assistance grants under the pro-  
19 gram—

20 “(I) on a competitive basis; and

21 “(II) on a periodic basis, but not  
22 less frequently than once every 12  
23 months.

24 “(D) PRIORITIES.—In selecting eligible en-  
25 tities for grants under the program, the Sec-

1           retary shall give priority to eligible entities with  
2           projects that have the greatest potential for—

3                   “(i) strengthening the reliability of en-  
4                   ergy infrastructure and the resilience of  
5                   energy infrastructure to the effects of ex-  
6                   treme weather events, power grid failures,  
7                   and interruptions in supply of power;

8                   “(ii) reducing the cost of energy stor-  
9                   age systems;

10                  “(iii) facilitating the use of renewable  
11                  energy resources;

12                  “(iv) minimizing environmental im-  
13                  pact, including regulated air pollutants and  
14                  greenhouse gas emissions;

15                  “(v) improving the feasibility of  
16                  microgrids or island-mode operation, par-  
17                  ticularly in rural areas, including rural  
18                  areas with high energy costs; and

19                  “(vi) maximizing local job creation.

20                  “(E) RULES AND PROCEDURES.—

21                   “(i) RULES.—Not later than 180 days  
22                   after the date of enactment of this Act, the  
23                   Secretary shall, by rule, establish proce-  
24                   dures for carrying out the program.



1 “(ii) GRANTS.—Not later than 120  
2 days after the date on which the Secretary  
3 establishes procedures for the program  
4 under subparagraph (A), the Secretary  
5 shall issue grants under this subsection.

6 “(F) REPORTS.—The Secretary shall sub-  
7 mit to Congress and make available to the pub-  
8 lic—

9 “(i) not less frequently than once  
10 every 2 years, a report describing the per-  
11 formance of the program under this sub-  
12 section, including a synthesis and analysis  
13 of any information the Secretary requires  
14 grant recipients to provide to the Secretary  
15 as a condition of receiving a grant; and

16 “(ii) on termination of the program  
17 under this subsection, an assessment of the  
18 success of, and education provided by, the  
19 measures carried out by eligible entities  
20 under the program.

21 “(10) DEPARTMENT OF ENERGY WORK-  
22 SHOPS.—The Secretary shall hold one or more work-  
23 shops during each of calendar years 2021 and 2023  
24 to facilitate the sharing, across the Department of  
25 Energy, the States, local and Tribal governments,

1 industry, and the academic research community, of  
2 research developments and new technical knowledge  
3 gained in carrying out this subsection.”.

4 (b) ENERGY STORAGE DEMONSTRATION PRO-  
5 GRAM.—The United States Energy Storage Competitive-  
6 ness Act of 2007 (42 U.S.C. 17231), as amended, is fur-  
7 ther amended by inserting after subsection (l), as added  
8 by subsection (a), the following:

9 “(m) ENERGY STORAGE DEMONSTRATION PRO-  
10 GRAM.—

11 “(1) ESTABLISHMENT.—The Secretary shall es-  
12 tablish a competitive grant program for the dem-  
13 onstration of energy storage systems, as identified  
14 by the Secretary, that use either—

15 “(A) a single system; or

16 “(B) aggregations of multiple systems.

17 “(2) SELECTION REQUIREMENTS.—In selecting  
18 eligible entities to receive a grant under this section,  
19 the Secretary shall, to the maximum extent prac-  
20 ticable—

21 “(A) ensure regional diversity among eligi-  
22 ble entities that receive the grants, including  
23 participation by rural States and small States;

24 “(B) ensure that specific projects selected  
25 for grants—

1 “(i) expand on the existing technology  
2 demonstration programs of the Depart-  
3 ment of Energy; and

4 “(ii) are designed to achieve one or  
5 more of the objectives described in para-  
6 graph (3);

7 “(C) give consideration to proposals from  
8 eligible entities for securing energy storage  
9 through competitive procurement or contract  
10 for service; and

11 “(D) prioritize projects that leverage  
12 matching funds from non-Federal sources.

13 “(3) OBJECTIVES.—Each demonstration project  
14 selected for a grant under paragraph (1) shall in-  
15 clude one or more of the following objectives:

16 “(A) To improve the security of critical in-  
17 frastructure and emergency response systems.

18 “(B) To improve the reliability of the  
19 transmission and distribution system, particu-  
20 larly in rural areas, including high energy cost  
21 rural areas.

22 “(C) To optimize transmission or distribu-  
23 tion system operation and power quality to  
24 defer or avoid costs of replacing or upgrading

1 electric grid infrastructure, including trans-  
2 formers and substations.

3 “(D) To supply energy at peak periods of  
4 demand on the electric grid or during periods of  
5 significant variation of electric grid supply or  
6 demand.

7 “(E) To reduce peak loads of homes and  
8 businesses, particularly to defer or avoid invest-  
9 ments in new electric grid capacity.

10 “(F) To advance power conversion systems  
11 to make the systems smarter, more efficient,  
12 able to communicate with other inverters, and  
13 able to control voltage.

14 “(G) To provide ancillary services for grid  
15 stability and management.

16 “(H) To integrate one or more energy re-  
17 sources, including renewable energy resources,  
18 at the source or away from the source.

19 “(I) To increase the feasibility of  
20 microgrids or island-mode operation.

21 “(J) To enable the use of stored energy in  
22 forms other than electricity to support the nat-  
23 ural gas system and other industrial processes.

24 “(4) RESTRICTION ON USE OF FUNDS.—Any el-  
25 ible entity that receives a grant under paragraph

1       (1) may only use the grant to fund programs relat-  
2       ing to the demonstration of energy storage systems  
3       connected to the electric grid, or that provides bi-di-  
4       rectional energy storage capable of providing back-  
5       up energy in the event of grid outages, including en-  
6       ergy storage systems sited behind a customer rev-  
7       enue meter.

8           “(5) COST SHARING.—In carrying out this sec-  
9       tion, the Secretary shall require cost sharing under  
10      this section in accordance with section 988 of the  
11      Energy Policy Act of 2005 (42 U.S.C. 16352).

12          “(6) NO PROJECT OWNERSHIP INTEREST.—The  
13      United States shall hold no equity or other owner-  
14      ship interest in an energy storage system for which  
15      a grant is provided under paragraph (1).

16          “(7) RULES AND PROCEDURES; AWARDING OF  
17      GRANTS.—

18           “(A) RULES AND PROCEDURES.—Not later  
19      than 180 days after the date of enactment of  
20      this subsection, the Secretary shall adopt rules  
21      and procedures for carrying out the grant pro-  
22      gram under subsection (m).

23           “(B) AWARDING OF GRANTS.—Not later  
24      than 1 year after the date on which the rules  
25      and procedures under paragraph (A) are estab-

1           lished, the Secretary shall award the initial  
2           grants provided under this section.

3           “(8) REPORTS.—The Secretary shall submit to  
4   Congress and make publicly available—

5           “(A) not less frequently than once every 2  
6           years for the duration of the grant program  
7           under subsection (m), a report describing the  
8           performance of the grant program, including a  
9           synthesis and analysis of any information the  
10          Secretary requires grant recipients to provide to  
11          the Secretary as a condition of receiving a  
12          grant; and

13          “(B) on termination of the grant program  
14          under subsection (m), an assessment of the suc-  
15          cess of, and education provided by, the meas-  
16          ures carried out by grant recipients under the  
17          grant program.

18          “(9) PROGRAM DEFINED.—In this subsection,  
19          the term ‘program’ means the demonstration pro-  
20          gram established under paragraph (1).”.

21          (c) AUTHORIZATION OF APPROPRIATIONS.—The  
22   United States Energy Storage Competitiveness Act of  
23   2007 (42 U.S.C. 17231) is amended, in subsection (t) (as  
24   redesignated by subsection (a)(1))—

1 (1) in paragraph (5), by striking “and” at the  
2 end;

3 (2) in paragraph (6), by striking the period at  
4 the end and inserting “;”; and

5 (3) by adding at the end the following:

6 “(7) the research and development program for  
7 energy storage systems under subsection (l)—

8 “(A) \$65,100,000 for fiscal year 2021;

9 “(B) \$68,355,000 for fiscal year 2022;

10 “(C) \$71,773,000 for fiscal year 2023;

11 “(D) \$75,362,000 for fiscal year 2024;

12 and

13 “(E) \$79,130,000 for fiscal year 2025; and

14 “(8) the demonstration program for energy  
15 storage systems under subsection (m), \$50,000,000  
16 for each of fiscal years 2021 through 2025.”.

17 **SEC. 5302. CRITICAL MINERAL RECYCLING AND REUSE RE-**  
18 **SEARCH, DEVELOPMENT, AND DEMONSTRA-**  
19 **TION PROGRAM.**

20 The United States Energy Storage Competitiveness  
21 Act of 2007 (42 U.S.C. 17231) is amended by inserting  
22 after subsection (m), as added by section 5301(b) of this  
23 Act, the following:

1       “(n) CRITICAL MINERAL RECYCLING AND REUSE  
2 RESEARCH, DEVELOPMENT, AND DEMONSTRATION PRO-  
3 GRAM.—

4       “(1) DEFINITIONS.—In this subsection:

5               “(A) CRITICAL MINERAL.—The term ‘crit-  
6 ical mineral’ means any of a class of chemical  
7 elements that have a high risk of a supply dis-  
8 ruption and are critical to one or more new, en-  
9 ergy-related technologies such that a shortage  
10 of such element would significantly inhibit  
11 large-scale deployment of technologies that  
12 store energy.

13              “(B) RECYCLING.—The term ‘recycling’  
14 means the separation of critical minerals em-  
15 bedded within an energy storage system  
16 through physical or chemical means and reuse  
17 of those separated critical minerals in other  
18 technologies.

19       “(2) ESTABLISHMENT.—Not later than 180  
20 days after the date of enactment of this subsection,  
21 the Secretary shall establish a research, develop-  
22 ment, and demonstration program of recycling of en-  
23 ergy storage systems containing critical minerals.

24       “(3) RESEARCH, DEVELOPMENT, AND DEM-  
25 ONSTRATION.—In carrying out the program, the



1 Secretary may focus research, development, and  
2 demonstration activities on—

3 “(A) technologies, process improvements,  
4 and design optimizations that facilitate and  
5 promote recycling, including—

6 “(i) improvement of efficiency and  
7 rates of collection of products and scrap  
8 containing critical minerals from con-  
9 sumer, industrial, and other waste streams;

10 “(ii) separation and sorting of compo-  
11 nent materials in energy storage systems  
12 containing critical minerals, including im-  
13 proving the recyclability of such energy  
14 storage systems;

15 “(iii) safe storage of energy storage  
16 systems, including reducing fire risk;

17 “(iv) safe transportation of energy  
18 storage systems and components; and

19 “(v) development of technologies to  
20 advance energy storage recycling facility  
21 infrastructure, including integrated recy-  
22 cling facilities that can process multiple  
23 materials;

24 “(B) research and development of tech-  
25 nologies that mitigate emissions and environ-

1           mental impacts that arise from recycling, in-  
2           cluding disposal of toxic reagents and byprod-  
3           ucts related to recycling processes;

4           “(C) research and development of tech-  
5           nologies to enable recycling of critical materials  
6           from batteries in electric vehicles;

7           “(D) research on and analysis of non-tech-  
8           nical barriers to improving the transportation of  
9           energy storage systems containing critical min-  
10          erals; and

11          “(E) research on technologies and methods  
12          to enable the safe disposal of energy storage  
13          systems containing critical minerals, including  
14          waste materials and components recovered dur-  
15          ing the recycling process.

16          “(4) REPORT TO CONGRESS.—Not later than 2  
17          years after the date of enactment of this subsection,  
18          and every 3 years thereafter, the Secretary shall  
19          submit to the Committee on Science, Space, and  
20          Technology of the House of Representatives and the  
21          Committee on Energy and Natural Resources of the  
22          Senate a report summarizing the activities, findings,  
23          and progress of the program.

24          “(o) DEFINITIONS.—For purposes of subsections (l),  
25          (m), and (n), the following definitions apply:

1           “(1) ENERGY STORAGE SYSTEM.—The term  
2           ‘energy storage system’ means equipment or facili-  
3           ties relating to the electric grid that are capable of  
4           absorbing and converting energy, as applicable, stor-  
5           ing the energy for a period of time, and dispatching  
6           the energy, and that—

7                   “(A) use mechanical, electrochemical, bio-  
8                   chemical, or thermal processes, to convert and  
9                   store energy that was generated at an earlier  
10                  time for use at a later time;

11                  “(B) use mechanical, electrochemical, bio-  
12                  chemical, or thermal processes to convert and  
13                  store energy generated from mechanical proc-  
14                  esses that would otherwise be wasted for deliv-  
15                  ery at a later time; or

16                  “(C) convert and store energy in an elec-  
17                  tric, thermal, or gaseous state for direct use for  
18                  heating or cooling at a later time in a manner  
19                  that avoids the need to use electricity or other  
20                  fuel sources at that later time, as is offered by  
21                  grid-enabled water heaters.

22           “(2) ELIGIBLE ENTITY.—The term ‘eligible en-  
23           tity’ means—

24                   “(A) a State, territory, or possession of the  
25                   United States;

1 “(B) a State energy office (as defined in  
2 section 124(a) of the Energy Policy Act of 2005  
3 (42 U.S.C. 15821(a)));

4 “(C) a tribal organization (as defined in  
5 section 3765 of title 38, United States Code);

6 “(D) an institution of higher education (as  
7 defined in section 101 of the Higher Education  
8 Act of 1965 (20 U.S.C. 1001));

9 “(E) an electric utility, including—

10 “(i) a rural electric cooperative;

11 “(ii) a political subdivision of a State,  
12 such as a municipally owned electric util-  
13 ity, or any agency, authority, corporation,  
14 or instrumentality of one or more State po-  
15 litical subdivisions; and

16 “(iii) an investor-owned utility; and

17 “(F) a private energy storage company  
18 that is a small business concern (as defined in  
19 section 3 of the Small Business Act (15 U.S.C.  
20 632)).

21 “(3) ISLAND MODE.—The term ‘island mode’  
22 means a mode in which a distributed generator or  
23 energy storage system continues to power a location  
24 in the absence of electric power from the primary  
25 source.

1 “(4) MICROGRID.—The term ‘microgrid’ means  
2 an integrated energy system consisting of inter-  
3 connected loads and distributed energy resources, in-  
4 cluding generators and energy storage systems, with-  
5 in clearly defined electrical boundaries that—

6 “(A) acts as a single controllable entity  
7 with respect to the electric grid;

8 “(B) can connect to, and disconnect from,  
9 the electric grid to operate in both grid-con-  
10 nected mode and island mode.

11 “(5) NATIONAL LABORATORY.—The term ‘na-  
12 tional laboratory’ has the meaning given the term in  
13 section 2 of the Energy Policy Act of 2005 (42  
14 U.S.C. 15801).”.

15 **PART 2—GRID MODERNIZATION RESEARCH AND**  
16 **DEVELOPMENT**

17 **SEC. 5321. SMART GRID REGIONAL DEMONSTRATION INI-**  
18 **TIATIVE.**

19 Section 1304 of the Energy Independence and Secu-  
20 rity Act of 2007 (42 U.S.C. 17384) is amended—

21 (1) in subsection (a), by inserting “research,  
22 development, and demonstration” before “program”;

23 (2) in subsection (b)—

24 (A) by amending paragraph (1) to read as  
25 follows:

1           “(1) IN GENERAL.—The Secretary shall estab-  
2       lish a smart grid regional demonstration initiative  
3       (referred to in this subsection as the ‘Initiative’)  
4       composed of demonstration projects focused on cost-  
5       effective, advanced technologies for use in power grid  
6       sensing, communications, analysis, power flow con-  
7       trol, visualization, distribution automation, industrial  
8       control systems, dynamic line rating systems, grid  
9       redesign, and the integration of distributed energy  
10      resources.”; and

11                   (B) in paragraph (2)—

12                   (i) in subparagraph (D), by striking  
13                   “and” at the end;

14                   (ii) in subparagraph (E), by striking  
15                   the period and inserting “; and”; and

16                   (iii) by inserting at the end the fol-  
17                   lowing:

18                   “(F) to encourage the commercial applica-  
19                   tion of advanced distribution automation tech-  
20                   nologies that exert intelligent control over elec-  
21                   trical grid functions at the distribution level to  
22                   improve system resilience.”.

1   **SEC. 5322. SMART GRID MODELING, VISUALIZATION, ARCHI-**  
2                   **TECTURE, AND CONTROLS.**

3           Title XIII of the Energy Independence and Security  
4   Act of 2007 (42 U.S.C. 17381 et seq.) is amended by in-  
5   serting after section 1304 the following:

6   **“SEC. 1304a. SMART GRID MODELING, VISUALIZATION, AR-**  
7                   **CHITECTURE, AND CONTROLS.**

8           “(a) IN GENERAL.—Not later than 180 days after  
9   the enactment of this section, the Secretary shall establish  
10   a program of research, development, demonstration, and  
11   commercial application on electric grid modeling, sensing,  
12   visualization, architecture development, and advanced op-  
13   eration and controls.

14          “(b) MODELING RESEARCH AND DEVELOPMENT.—  
15   The Secretary shall support development of models of  
16   emerging technologies and systems to facilitate the secure  
17   and reliable design, planning, and operation of the electric  
18   grid for use by industry stakeholders. In particular, the  
19   Secretary shall support development of—

20               “(1) models to analyze and predict the effects  
21               of adverse physical and cyber events on the electric  
22               grid;

23               “(2) coupled models of electrical, physical, and  
24               cyber systems;

25               “(3) models of existing and emerging tech-  
26               nologies being deployed on the electric grid due to

1 projected changes in the electric generation mix and  
2 loads, for a variety of regional characteristics; and  
3 “(4) integrated models of the communications,  
4 transmission, distribution, and other interdependent  
5 systems for existing, new, and emerging tech-  
6 nologies.

7 “(c) SITUATIONAL AWARENESS RESEARCH AND DE-  
8 VELOPMENT.—

9 “(1) IN GENERAL.—The Secretary shall sup-  
10 port development of computational tools and tech-  
11 nologies to improve sensing, monitoring, and visual-  
12 ization of the electric grid for real-time situational  
13 awareness and decision support tools that enable im-  
14 proved operation of the power system, including util-  
15 ity, non-utility, and customer grid-connected assets,  
16 for use by industry partners.

17 “(2) DATA USE.—In developing visualization  
18 capabilities under this section, the Secretary shall  
19 develop tools for industry stakeholders to use to ana-  
20 lyze data collected from advanced measurement and  
21 monitoring technologies, including data from phasor  
22 measurement units and advanced metering units.

23 “(3) SEVERE EVENTS.—The Secretary shall  
24 prioritize enhancing cyber and physical situational



1 awareness of the electric grid during adverse man-  
2 made and naturally-occurring events.

3 “(d) ARCHITECTURE.—The Secretary shall conduct  
4 research in collaboration with industry stakeholders to de-  
5 velop model grid architectures to assist with wide-area  
6 transmission and distribution planning that incorporate  
7 expected changes to the modern electric grid. In sup-  
8 porting the development of model grid architectures, the  
9 Secretary shall—

10 “(1) analyze a variety of grid architecture sce-  
11 narios that range from minor upgrades to existing  
12 transmission grid infrastructure to scenarios that in-  
13 volve the replacement of significant portions of exist-  
14 ing transmission grid infrastructure;

15 “(2) analyze the effects of the increasing pro-  
16 liferation of renewable and other zero emissions en-  
17 ergy generation sources, increasing use of distrib-  
18 uted resources owned by non-utility entities, and the  
19 use of digital and automated controls not managed  
20 by grid operators;

21 “(3) include a variety of new and emerging dis-  
22 tribution grid technologies, including distributed en-  
23 ergy resources, electric vehicle charging stations, dis-  
24 tribution automation technologies, energy storage,  
25 and renewable energy sources;

1           “(4) analyze the effects of local load balancing  
2           and other forms of decentralized control;

3           “(5) analyze the effects of changes to grid ar-  
4           chitectures resulting from modernizing electric grid  
5           systems, including communications, controls, mar-  
6           kets, consumer choice, emergency response, elec-  
7           trification, and cybersecurity concerns; and

8           “(6) develop integrated grid architectures that  
9           incorporate system resilience for cyber, physical, and  
10          communications systems.

11          “(e) OPERATION AND CONTROLS RESEARCH AND  
12          DEVELOPMENT.—The Secretary shall conduct research to  
13          develop improvements to the operation and controls of the  
14          electric grid, in coordination with industry partners. Such  
15          activities shall include—

16               “(1) a training facility or facilities to allow grid  
17               operators to gain operational experience with ad-  
18               vanced grid control concepts and technologies;

19               “(2) development of cost-effective advanced op-  
20               eration and control concepts and technologies, such  
21               as adaptive islanding, dynamic line rating systems,  
22               power flow controllers, network topology optimiza-  
23               tion, smart circuit breakers, intelligent load shed-  
24               ding, and fault-tolerant control system architectures;

1           “(3) development of real-time control concepts  
2           using artificial intelligence and machine learning for  
3           improved electric grid resilience; and

4           “(4) utilization of advanced data analytics in-  
5           cluding load forecasting, power flow modeling, equip-  
6           ment failure prediction, resource optimization, risk  
7           analysis, and decision analysis.

8           “(f) INTEROPERABILITY RESEARCH AND DEVELOP-  
9           MENT.—The Secretary shall conduct research and devel-  
10          opment on tools and technologies that improve the inter-  
11          operability and compatibility of new and emerging compo-  
12          nents, technologies, and systems with existing electric grid  
13          infrastructure.

14          “(g) COMPUTING RESOURCES AND DATA COORDINA-  
15          TION RESEARCH AND DEVELOPMENT.—In carrying out  
16          this section, the Secretary shall—

17                 “(1) leverage existing computing resources at  
18                 the National Laboratories;

19                 “(2) develop voluntary standards for data  
20                 taxonomies and communication protocols in coordi-  
21                 nation with public and private sector stakeholders;  
22                 and

23                 “(3) comply with section 5327 of the Clean  
24                 Economy Jobs and Innovation Act.

1       “(h) INFORMATION SHARING.—None of the activities  
2 authorized in this section shall require private entities to  
3 share information or data with the Secretary.

4       “(i) RESILIENCE.—In this section, the term ‘resil-  
5 ience’ means the ability to withstand and reduce the mag-  
6 nitude or duration of disruptive events, which includes the  
7 capability to anticipate, absorb, adapt to, or rapidly re-  
8 cover from such an event, including from deliberate at-  
9 tacks, accidents, and naturally occurring threats or inci-  
10 dents.”.

11 **SEC. 5323. HYBRID ENERGY SYSTEMS.**

12       Title XIII of the Energy Independence and Security  
13 Act of 2007 (42 U.S.C. 17381 et. seq.), as amended, is  
14 amended by adding at the end the following:

15 **“SEC. 1310. HYBRID ENERGY SYSTEMS.**

16       “(a) IN GENERAL.—Not later than 180 days after  
17 the enactment of this section, the Secretary shall establish  
18 a research, development, and demonstration program to  
19 develop cost-effective hybrid energy systems, including—

20               “(1) development of computer modeling to de-  
21 sign different configurations of hybrid energy sys-  
22 tems and to optimize system operation;

23               “(2) research on system integration needed to  
24 plan, design, build, and operate hybrid energy sys-

1       tems, including interconnection requirements with  
2       the electric grid;

3           “(3) development of hybrid energy systems for  
4       various applications, including—

5           “(A) thermal energy generation and stor-  
6       age for buildings and manufacturing;

7           “(B) electricity storage coupled with en-  
8       ergy generation;

9           “(C) desalination;

10          “(D) production of liquid and gaseous  
11       fuels; and

12          “(E) production of chemicals such as am-  
13       monia and ethylene;

14          “(4) development of testing facilities for hybrid  
15       energy systems; and

16          “(5) research on incorporation of various tech-  
17       nologies for hybrid energy systems, including nuclear  
18       energy, renewable energy, storage, and carbon cap-  
19       ture, utilization, and sequestration technologies.

20       “(b) STRATEGIC PLAN.—

21          “(1) IN GENERAL.—Not later than 1 year after  
22       the date of the enactment of this section, the Sec-  
23       retary shall submit to the Committee on Science,  
24       Space, and Technology of the House of Representa-  
25       tives and the Committee on Energy and Natural Re-

1 sources of the Senate a strategic plan that identifies  
2 opportunities, challenges, and standards needed for  
3 the development and commercial application of hy-  
4 brid energy systems. The strategic plan shall in-  
5 clude—

6 “(A) analysis of the potential benefits of  
7 development of hybrid electric systems on the  
8 electric grid;

9 “(B) analysis of the potential contributions  
10 of hybrid energy systems to different grid archi-  
11 tecture scenarios;

12 “(C) research and development goals for  
13 various hybrid energy systems, including those  
14 identified in subsection (a);

15 “(D) assessment of policy and market bar-  
16 riers to the adoption of hybrid energy systems;

17 “(E) analysis of the technical and eco-  
18 nomic feasibility of adoption of different hybrid  
19 energy systems; and

20 “(F) a 10-year roadmap to guide the pro-  
21 gram established under subsection (a).

22 “(2) UPDATES.—Not less than once every 3  
23 years for the duration of this research program, the  
24 Secretary shall submit an updated version of the  
25 strategic plan to the Committee on Science, Space,

1 and Technology of the House of Representatives and  
2 the Committee on Energy and Natural Resources of  
3 the Senate.

4 “(c) PROGRAM IMPLEMENTATION.—In carrying out  
5 the research, development, demonstration, and commercial  
6 application aims of section, the Secretary shall—

7 “(1) implement the recommendations set forth  
8 in the strategic plan in subsection (b);

9 “(2) coordinate across all relevant program of-  
10 fices at the Department, including—

11 “(A) the Office of Energy Efficiency and  
12 Renewable Energy;

13 “(B) the Office of Nuclear Energy; and

14 “(C) the Office of Fossil Energy;

15 “(3) leverage existing programs and resources  
16 of the Department;

17 “(4) prioritize activities that accelerate the de-  
18 velopment of integrated electricity generation, stor-  
19 age, and distribution systems with net zero green-  
20 house gas emissions; and

21 “(5) comply with section 5326 of the Clean  
22 Economy Jobs and Innovation Act.

23 “(d) HYBRID ENERGY SYSTEM DEFINED.—The term  
24 ‘hybrid energy system’ means a system composed of 2 or

1 more co-located or jointly operated sub-systems of energy  
2 generation, energy storage, or other energy technologies.”.

3 **SEC. 5324. GRID INTEGRATION RESEARCH AND DEVELOP-**  
4 **MENT.**

5 (a) INTEGRATING DISTRIBUTED ENERGY RE-  
6 SOURCES ONTO THE ELECTRIC GRID.—Section 925(a) of  
7 the Energy Policy Act of 2005 (42 U.S.C. 16215) is  
8 amended—

9 (1) by redesignating paragraphs (10) and (11)  
10 as paragraphs (12) and (13), respectively; and

11 (2) by inserting after paragraph (9) the fol-  
12 lowing:

13 “(10) the development of cost-effective tech-  
14 nologies that enable two-way information and power  
15 flow between distributed energy resources and the  
16 electric grid;

17 “(11) the development of technologies and con-  
18 cepts that enable interoperability between distributed  
19 energy resources and other behind-the-meter devices  
20 and the electric grid;”.

21 (b) INTEGRATING RENEWABLE ENERGY ONTO THE  
22 ELECTRIC GRID.—Subtitle C of title IX of the Energy  
23 Policy Act of 2005 (42 U.S.C. 16231 et seq.) is amended  
24 by adding at the end the following:



1 **“SEC. 936. RESEARCH AND DEVELOPMENT INTO INTE-**  
2 **GRATING RENEWABLE ENERGY ONTO THE**  
3 **ELECTRIC GRID.**

4 “(a) IN GENERAL.—Not later than 180 days after  
5 the enactment of this section, the Secretary shall establish  
6 a research, development, and demonstration program on  
7 technologies that enable integration of renewable energy  
8 generation sources onto the electric grid across multiple  
9 program offices of the Department. The program shall in-  
10 clude—

11 “(1) forecasting for predicting generation from  
12 variable renewable energy sources;

13 “(2) development of cost-effective low-loss, long-  
14 distance transmission lines; and

15 “(3) development of cost-effective advanced  
16 technologies for variable renewable generation  
17 sources to provide grid services.

18 “(b) COORDINATION.—In carrying out this program,  
19 the Secretary shall—

20 “(1) coordinate across all relevant program of-  
21 fices at the Department to achieve the goals estab-  
22 lished in this section, including the Office of Elec-  
23 tricity; and

24 “(2) comply with section 5326 of the Clean  
25 Economy Jobs and Innovation Act.

1       “(c) ADOPTION OF TECHNOLOGIES.—In carrying out  
2 this section, the Secretary shall consider barriers to adop-  
3 tion and commercial application of technologies that en-  
4 able integration of renewable energy sources onto the elec-  
5 tric grid, including cost and other economic barriers, and  
6 shall coordinate with relevant entities to reduce these bar-  
7 riers.”.

8       (c) INTEGRATING ELECTRIC VEHICLES ONTO THE  
9 ELECTRIC GRID.—Subtitle B of title I of the Energy Inde-  
10 pendence and Security Act of 2007 (42 U.S.C. 17011 et  
11 seq.) is amended by adding at the end the following:

12       **“SEC. 137. RESEARCH AND DEVELOPMENT INTO INTE-**  
13                       **GRATING ELECTRIC VEHICLES ONTO THE**  
14                       **ELECTRIC GRID.**

15       “(a) IN GENERAL.—The Secretary shall establish a  
16 research, development, and demonstration program to ad-  
17 vance the integration of electric vehicles, including plug-  
18 in hybrid electric vehicles, onto the electric grid.

19       “(b) VEHICLES-TO-GRID INTEGRATION ASSESSMENT  
20 REPORT.—Not later than 1 year after the enactment of  
21 this section, the Secretary shall submit to the Committee  
22 on Science, Space, and Technology of the House of Rep-  
23 resentatives and the Committee on Energy and Natural  
24 Resources of the Senate a report on the results of a study  
25 that examines the research, development, and demonstra-

1 tion opportunities, challenges, and standards needed for  
2 integrating electric vehicles onto the electric grid.

3 “(1) REPORT REQUIREMENTS.—The report  
4 shall include—

5 “(A) an evaluation of the use of electric ve-  
6 hicles to maintain the reliability of the electric  
7 grid, including—

8 “(i) the use of electric vehicles for de-  
9 mand response, load shaping, emergency  
10 power, and frequency regulation; and

11 “(ii) the potential for the reuse of  
12 spent electric vehicle batteries for sta-  
13 tionary grid storage;

14 “(B) the impact of grid integration on  
15 electric vehicles, including—

16 “(i) the impact of bi-directional elec-  
17 tricity flow on battery degradation; and

18 “(ii) the implications of the use of  
19 electric vehicles for grid services on origi-  
20 nal equipment manufacturer warranties;

21 “(C) the impacts to the electric grid of in-  
22 creased penetration of electric vehicles, includ-  
23 ing—

1 “(i) the distribution grid infrastruc-  
2 ture needed to support an increase in  
3 charging capacity;

4 “(ii) strategies for integrating electric  
5 vehicles onto the distribution grid while  
6 limiting infrastructure upgrades;

7 “(iii) the changes in electricity de-  
8 mand over a 24-hour cycle due to electric  
9 vehicle charging behavior;

10 “(iv) the load increases expected from  
11 electrifying the transportation sector;

12 “(v) the potential for customer incen-  
13 tives and other managed charging stations  
14 strategies to shift charging off-peak;

15 “(vi) the technology needed to achieve  
16 bi-directional power flow on the distribu-  
17 tion grid; and

18 “(vii) the implementation of smart  
19 charging techniques;

20 “(D) research on the standards needed to  
21 integrate electric vehicles with the grid, includ-  
22 ing communications systems, protocols, and  
23 charging stations, in collaboration with the Na-  
24 tional Institute for Standards and Technology;

1           “(E) the cybersecurity challenges and  
2           needs associated with electrifying the transpor-  
3           tation sector; and

4           “(F) an assessment of the feasibility of  
5           adopting technologies developed under the pro-  
6           gram established under subsection (a) at De-  
7           partment facilities.

8           “(2) RECOMMENDATIONS.—As part of the Ve-  
9           hicles-to-Grid Integration Assessment Report, the  
10          Secretary shall develop a 10-year roadmap to guide  
11          the research, development, and demonstration pro-  
12          gram to integrate electric vehicles onto the electric  
13          grid.

14          “(3) CONSULTATION.—In developing this re-  
15          port, the Secretary shall consult with relevant stake-  
16          holders, including—

17                 “(A) electric vehicle manufacturers;

18                 “(B) electric utilities;

19                 “(C) public utility commissions;

20                 “(D) vehicle battery manufacturers;

21                 “(E) electric vehicle supply equipment  
22          manufacturers;

23                 “(F) charging infrastructure manufactur-  
24          ers;

25                 “(G) the National Laboratories; and

1                   “(H) other Federal agencies, as the Sec-  
2                   retary determines appropriate.

3                   “(4) UPDATES.—The Secretary shall update  
4                   the report required under this section every 3 years  
5                   for the duration of the program under section (a)  
6                   and shall submit the updated report to the Com-  
7                   mittee on Science, Space, and Technology of the  
8                   House of Representatives and the Committee on En-  
9                   ergy and Natural Resources of the Senate.

10                  “(c) PROGRAM IMPLEMENTATION.—In carrying out  
11                  the research, development, demonstration, and commercial  
12                  application aims of section, the Secretary shall—

13                         “(1) implement the recommendations set forth  
14                         in the report in subsection (b);

15                         “(2) coordinate across all relevant program of-  
16                         fices at the Department to achieve the goals estab-  
17                         lished in this section, including the Office of Elec-  
18                         tricity; and

19                         “(3) comply with section 5326 of the Clean  
20                         Economy Jobs and Innovation Act.

21                  “(d) TESTING CAPABILITIES.—The Secretary shall  
22                  coordinate with the National Laboratories to develop test-  
23                  ing capabilities for the evaluation, rapid prototyping, and  
24                  optimization of technologies enabling integration of elec-  
25                  tric vehicles onto the electric grid.”.

1           (d) RESEARCH AND DEVELOPMENT ON INTEGRATING  
2 BUILDINGS ONTO THE ELECTRIC GRID.—Subtitle B of  
3 title IV of the Energy Independence and Security Act of  
4 2007 (42 U.S.C. 17081 et seq.) is amended by adding at  
5 the end the following:

6           **“SEC. 426. ADVANCED INTEGRATION OF BUILDINGS ONTO**  
7                           **THE ELECTRIC GRID.**

8           “(a) BUILDINGS-TO-GRID INTEGRATION REPORT.—  
9 Not later than 1 year after the enactment of this section,  
10 the Secretary shall submit to the Committee on Science,  
11 Space, and Technology of the House of Representatives  
12 and the Committee on Energy and Natural Resources of  
13 the Senate a report on the results of a study that examines  
14 the research, development, and demonstration opportuni-  
15 ties, challenges, and standards needed to enable compo-  
16 nents of commercial and residential buildings to serve as  
17 dynamic energy loads on and resources for the electric  
18 grid.

19                   “(1) REPORT REQUIREMENTS.—The report  
20 shall include—

21                           “(A) an assessment of the technologies  
22 needed to enable building components as dy-  
23 namic loads on and resources for the electric  
24 grid, including how such technologies can be—

1 “(i) incorporated into new commercial  
2 and residential buildings; and

3 “(ii) retrofitted in older buildings;

4 “(B) guidelines for the design of new  
5 buildings and building components to enable  
6 modern grid interactivity and improve energy  
7 efficiency;

8 “(C) an assessment of barriers to the  
9 adoption by building owners of advanced tech-  
10 nologies enabling greater integration of building  
11 components onto the electric grid; and

12 “(D) an assessment of the feasibility of  
13 adopting advanced building technologies at De-  
14 partment facilities.

15 “(2) RECOMMENDATIONS.—As part of the re-  
16 port, the Secretary shall develop a 10-year roadmap  
17 to guide the research, development, and demonstra-  
18 tion program to enable components of commercial  
19 and residential buildings to serve as dynamic energy  
20 loads on and resources for the electric grid.

21 “(3) UPDATES.—The Secretary shall update  
22 the report required under this section every 3 years  
23 for the duration of the program under subsection (a)  
24 and shall submit the updated report to the Com-  
25 mittee on Science, Space, and Technology of the



1 House of Representatives and the Committee on En-  
2 ergy and Natural Resources of the Senate.

3 “(b) PROGRAM IMPLEMENTATION.—In carrying out  
4 this section, the Secretary shall—

5 “(1) implement the recommendations from the  
6 report in subsection (a);

7 “(2) coordinate across all relevant program of-  
8 fices at the Department to achieve the goals estab-  
9 lished in this section, including the Office of Elec-  
10 tricity; and

11 “(3) comply with section 5326 of the Clean  
12 Economy Jobs and Innovation Act.”.

13 **SEC. 5325. INDUSTRY ALLIANCE.**

14 Title XIII of the Energy Independence and Security  
15 Act of 2007 (42 U.S.C. 17381 et. seq.), as amended, is  
16 amended by adding at the end the following:

17 **“SEC. 1311. INDUSTRY ALLIANCE.**

18 “(a) IN GENERAL.—Not later than 180 days after  
19 the enactment of this section, the Secretary shall establish  
20 an advisory committee (to be known as the ‘Industry Alli-  
21 ance’) to advise the Secretary on the authorization of re-  
22 search, development, and demonstration projects under  
23 sections 1304 and 1304a.

24 “(b) MEMBERSHIP.—The Industry Alliance shall be  
25 composed of members selected by the Secretary that, as

1 a group, are broadly representative of United States elec-  
2 tric grid research, development, infrastructure, operations,  
3 and manufacturing expertise.

4 “(c) RESPONSIBILITY.—The Secretary shall annually  
5 solicit from the Industry Alliance—

6 “(1) comments to identify grid modernization  
7 technology needs;

8 “(2) an assessment of the progress of the re-  
9 search activities on grid modernization; and

10 “(3) assistance in annually updating grid mod-  
11 ernization technology roadmaps.”.

12 **SEC. 5326. COORDINATION OF EFFORTS.**

13 In carrying out the amendments made by this part,  
14 the Secretary shall coordinate with relevant entities to the  
15 maximum extent practicable, including—

16 (1) electric utilities;

17 (2) private sector entities;

18 (3) representatives of all sectors of the electric  
19 power industry;

20 (4) transmission organizations;

21 (5) transmission owners and operators;

22 (6) distribution organizations;

23 (7) distribution asset owners and operators;

24 (8) State, tribal, local, and territorial govern-  
25 ments and regulatory authorities;

- 1 (9) academic institutions;
- 2 (10) the National Laboratories;
- 3 (11) other Federal agencies;
- 4 (12) nonprofit organizations;
- 5 (13) the Federal Energy Regulatory Commis-
- 6 sion;
- 7 (14) the North American Reliability Corpora-
- 8 tion;
- 9 (15) independent system operators; and
- 10 (16) programs and program offices at the De-
- 11 partment.

12 **SEC. 5327. TECHNICAL AMENDMENTS; AUTHORIZATION OF**  
13 **APPROPRIATIONS.**

14 (a) TECHNICAL AMENDMENTS.—

15 (1) ENERGY INDEPENDENCE AND SECURITY  
16 ACT OF 2007.—Section 1(b) of the Energy Inde-  
17 pendence and Security Act of 2007 is amended in  
18 the table of contents—

19 (A) by inserting the following after the  
20 item related to section 136:

“Sec. 137. Research and development into integrating electric vehicles onto the  
electric grid.”;

21 (B) by inserting the following after the  
22 item related to section 425:

“Sec. 426. Advanced integration of buildings onto the electric grid.”;

1 (C) by inserting the following after the  
2 item related to section 1304:

“Sec. 1304a. Smart grid modeling, visualization, architecture, and controls.”;  
and

3 (D) by inserting the following after the  
4 item related to section 1309:

“Sec. 1310. Hybrid energy systems.  
“Sec. 1311. Industry Alliance.”.

5 (2) ENERGY POLICY ACT OF 2005.—Section  
6 1(b) of the Energy Policy Act of 2005 is amended  
7 in the table of contents by inserting the following  
8 after the item related to section 935:

“Sec. 936. Research and development into integrating renewable energy onto  
the electric grid.”.

9 (b) AUTHORIZATION OF APPROPRIATIONS.—There  
10 are authorized to be appropriated—

11 (1) to carry out sections 5325 and 5326 and  
12 the amendments made by sections 5321 and 5322 of  
13 this part—

14 (A) \$175,000,000 for fiscal year 2021;

15 (B) \$180,000,000 for fiscal year 2022;

16 (C) \$185,000,000 for fiscal year 2023;

17 (D) \$190,000,000 for fiscal year 2024;

18 and

19 (E) \$199,500,000 for fiscal year 2025;

20 (2) to carry out section 5323 of this part—

21 (A) \$21,000,000 for fiscal year 2021;

22 (B) \$22,050,000 for fiscal year 2022;

- 1 (C) \$23,153,000 for fiscal year 2023;  
2 (D) \$24,310,000 for fiscal year 2024; and  
3 (E) \$25,525,000 for fiscal year 2025; and  
4 (3) to carry out section 5324 of this part—  
5 (A) \$52,500,000 for fiscal year 2021;  
6 (B) \$55,152,000 for fiscal year 2022;  
7 (C) \$57,882,000 for fiscal year 2023;  
8 (D) \$60,775,000 for fiscal year 2024; and  
9 (E) \$63,814,000 for fiscal year 2025.

10 **PART 3—GRID SECURITY RESEARCH AND**  
11 **DEVELOPMENT**

12 **SEC. 5341. AMENDMENT TO ENERGY INDEPENDENCE AND**  
13 **SECURITY ACT OF 2007.**

14 (a) IN GENERAL.—Title XIII of the Energy Inde-  
15 pendence and Security Act of 2007 (42 U.S.C. 17381 et  
16 seq.), as amended by this Act, is further amended by add-  
17 ing at the end the following:

18 **“SEC. 1313. ENERGY SECTOR SECURITY RESEARCH, DEVEL-**  
19 **OPMENT, AND DEMONSTRATION PROGRAM.**

20 “(a) IN GENERAL.—The Secretary, in coordination  
21 with appropriate Federal agencies, the Electricity Sub-  
22 sector Coordinating Council, the Electric Reliability Orga-  
23 nization, State, tribal, local, and territorial governments,  
24 the private sector, and other relevant stakeholders, shall  
25 carry out a research, development, and demonstration pro-

1 gram to protect the electric grid and energy systems, in-  
2 cluding assets connected to the distribution grid, from  
3 cyber and physical attacks by increasing the cyber and  
4 physical security capabilities of the energy sector and ac-  
5 celerating the development of relevant technologies and  
6 tools.

7 “(b) DEPARTMENT OF ENERGY.—As part of the ini-  
8 tiative described in subsection (a), the Secretary shall  
9 award research, development, and demonstration grants  
10 to—

11 “(1) identify cybersecurity risks to the elec-  
12 tricity sector, energy systems, and energy infrastruc-  
13 ture;

14 “(2) develop methods and tools to rapidly detect  
15 cyber intrusions and cybersecurity incidents, includ-  
16 ing through the use of data and big data analytics  
17 techniques, such as intrusion detection, and security  
18 information and event management systems, to vali-  
19 date and verify system behavior;

20 “(3) assess emerging cybersecurity capabilities  
21 that could be applied to energy systems and develop  
22 technologies that integrate cybersecurity features  
23 and procedures into the design and development of  
24 existing and emerging grid technologies, including

1 renewable energy, storage, and demand-side manage-  
2 ment technologies;

3 “(4) identify existing vulnerabilities in intel-  
4 ligent electronic devices, advanced analytics systems,  
5 and information systems;

6 “(5) work with relevant entities to develop tech-  
7 nologies or concepts that build or retrofit cybersecu-  
8 rity features and procedures into—

9 “(A) information and energy management  
10 system devices, components, software, firmware,  
11 and hardware, including distributed control and  
12 management systems, and building manage-  
13 ment systems;

14 “(B) data storage systems, data manage-  
15 ment systems, and data analysis processes;

16 “(C) automated- and manually-controlled  
17 devices and equipment for monitoring and sta-  
18 bilizing the electric grid;

19 “(D) technologies used to synchronize time  
20 and develop guidance for operational contin-  
21 gency plans when time synchronization tech-  
22 nologies, are compromised;

23 “(E) power system delivery and end user  
24 systems and devices that connect to the grid,  
25 including—

1 “(i) meters, phasor measurement  
2 units, and other sensors;

3 “(ii) distribution automation tech-  
4 nologies, smart inverters, and other grid  
5 control technologies;

6 “(iii) distributed generation, energy  
7 storage, and other distributed energy tech-  
8 nologies;

9 “(iv) demand response technologies;

10 “(v) home and building energy man-  
11 agement and control systems;

12 “(vi) electric and plug-in hybrid vehi-  
13 cles and electric vehicle charging systems;  
14 and

15 “(vii) other relevant devices, software,  
16 firmware, and hardware; and

17 “(F) the supply chain of electric grid man-  
18 agement system components;

19 “(6) develop technologies that improve the  
20 physical security of information systems, including  
21 remote assets;

22 “(7) integrate human factors research into the  
23 design and development of advanced tools and proc-  
24 esses for dynamic monitoring, detection, protection,



1 mitigation, response, and cyber situational aware-  
2 ness;

3 “(8) evaluate and understand the potential con-  
4 sequences of practices used to maintain the cyberse-  
5 curity of information systems and intelligent elec-  
6 tronic devices;

7 “(9) develop or expand the capabilities of exist-  
8 ing cybersecurity test beds to simulate impacts of  
9 cyber attacks and combined cyber-physical attacks  
10 on information systems and electronic devices, in-  
11 cluding by increasing access to existing and emerg-  
12 ing test beds for cooperative utilities, utilities owned  
13 by a political subdivision of a State, such as municipi-  
14 pally-owned electric utilities, and other relevant  
15 stakeholders; and

16 “(10) develop technologies that reduce the cost  
17 of implementing effective cybersecurity technologies  
18 and tools, including updates to these technologies  
19 and tools, in the energy sector.

20 “(c) NATIONAL SCIENCE FOUNDATION.—The Na-  
21 tional Science Foundation, in coordination with other Fed-  
22 eral agencies, shall through its cybersecurity research and  
23 development programs—

24 “(1) support basic research to advance knowl-  
25 edge, applications, technologies, and tools to

1       strengthen the cybersecurity of information systems  
2       that support the electric grid and energy systems,  
3       including interdisciplinary research in—

4               “(A) evolutionary systems, theories, mathe-  
5               matics, and models;

6               “(B) economic and financial theories,  
7               mathematics, and models; and

8               “(C) big data analytical methods, mathe-  
9               matics, computer coding, and algorithms; and

10              “(2) support cybersecurity education and train-  
11              ing focused on information systems for the electric  
12              grid and energy workforce, including through the  
13              Advanced Technological Education program, the  
14              Cybercorps program, graduate research fellowships,  
15              and other appropriate programs.

16   **“SEC. 1314. GRID RESILIENCE AND EMERGENCY RESPONSE.**

17       “(a) IN GENERAL.—Not later than 180 days after  
18       the enactment of this section, the Secretary, in coordina-  
19       tion with appropriate Federal agencies, shall establish a  
20       research, development, and demonstration program to en-  
21       hance resilience and strengthen emergency response and  
22       management pertaining to the energy sector.

23       “(b) GRANTS.—The Secretary shall award grants to  
24       eligible entities under subsection (c) on a competitive basis

1 to conduct research and development with the purpose of  
2 improving the resilience and reliability of electric grid by—

3 “(1) developing methods to improve community  
4 and governmental preparation for and emergency re-  
5 sponse to large-area, long-duration electricity inter-  
6 ruptions, including through the use of energy effi-  
7 ciency, storage, and distributed generation tech-  
8 nologies;

9 “(2) developing tools to help utilities and com-  
10 munities ensure the continuous delivery of electricity  
11 to critical facilities;

12 “(3) developing tools to improve coordination  
13 between utilities and relevant Federal agencies to  
14 enable communication, information-sharing, and sit-  
15 uational awareness in the event of a physical or  
16 cyber-attack on the electric grid;

17 “(4) developing technologies and capabilities to  
18 withstand and address the current and projected im-  
19 pact of the changing climate on energy sector infra-  
20 structure, including extreme weather events and  
21 other natural disasters;

22 “(5) developing technologies capable of early  
23 detection of malfunctioning electrical equipment on  
24 the transmission and distribution grid, including de-

1       tection of spark ignition causing wildfires and risks  
2       of vegetation contact;

3           “(6) assessing upgrades and additions needed  
4       to energy sector infrastructure due to projected  
5       changes in the energy generation mix and energy de-  
6       mand; and

7           “(7) upgrading tools used to estimate the costs  
8       of outages longer than 24 hours.

9           “(8) developing tools and technologies to assist  
10      with the planning, safe execution of, and safe and  
11      timely restoration of power after emergency power  
12      shut offs, such as those conducted to reduce risks of  
13      wildfires started by grid infrastructure.

14      “(c) ELIGIBLE ENTITIES.—The entities eligible to re-  
15      ceive grants under this section include—

16           “(1) an institution of higher education, includ-  
17      ing a historically Black college or university and a  
18      minority-serving institution.

19           “(2) a nonprofit organization;

20           “(3) a National Laboratory;

21           “(4) a unit of State, local, or tribal government;

22           “(5) an electric utility or electric cooperative;

23           “(6) a retail service provider of electricity;

24           “(7) a private commercial entity;

1           “(8) a partnership or consortium of 2 or more  
2           entities described in subparagraphs (1) through (7);  
3           and

4           “(9) any other entities the Secretary deems ap-  
5           propriate.

6           “(d) RELEVANT ACTIVITIES.—Grants awarded under  
7           subsection (b) shall include funding for research and de-  
8           velopment activities related to the purpose described in  
9           subsection (b), such as—

10           “(1) development of technologies to use distrib-  
11           uted energy resources, such as solar photovoltaics,  
12           energy storage systems, electric vehicles, and  
13           microgrids, to improve grid and critical end-user re-  
14           silience;

15           “(2) analysis of non-technical barriers to great-  
16           er integration and use of technologies on the dis-  
17           tribution grid;

18           “(3) analysis of past large-area, long-duration  
19           electricity interruptions to identify common elements  
20           and best practices for electricity restoration, mitiga-  
21           tion, and prevention of future disruptions;

22           “(4) development of advanced monitoring, ana-  
23           lytics, operation, and controls of electric grid sys-  
24           tems to improve electric grid resilience;

1           “(5) analysis of technologies, methods, and con-  
2           cepts that can improve community resilience and  
3           survivability of frequent or long-duration power out-  
4           ages;

5           “(6) development of methodologies to maintain  
6           cybersecurity during restoration of energy sector in-  
7           frastructure and operation;

8           “(7) development of advanced power flow con-  
9           trol systems and components to improve electric grid  
10          resilience; and

11          “(8) any other relevant activities determined by  
12          the Secretary.

13          “(e) TECHNICAL ASSISTANCE.—

14               “(1) IN GENERAL.—The Secretary, in consulta-  
15               tion with relevant Federal agencies, shall provide  
16               technical assistance to eligible entities for the com-  
17               mercial application of technologies to improve the re-  
18               silience of the electric grid and commercial applica-  
19               tion of technologies to help entities develop plans for  
20               preventing and recovering from various power out-  
21               age scenarios at the local, regional, and State level.

22               “(2) TECHNICAL ASSISTANCE PROGRAM.—The  
23               commercial application technical assistance program  
24               established in paragraph (1) shall include assistance  
25               to eligible entities for—

1           “(A) the commercial application of tech-  
2 nologies developed from the grant program es-  
3 tablished in subsection (b), including coopera-  
4 tive utilities and utilities owned by a political  
5 subdivision of a State, such as municipally-  
6 owned electric utilities;

7           “(B) the development of methods to  
8 strengthen or otherwise mitigate adverse im-  
9 pacts on electric grid infrastructure against  
10 natural hazards;

11           “(C) the use of Department data and mod-  
12 eling tools for various purposes;

13           “(D) a resource assessment and analysis of  
14 future demand and distribution requirements,  
15 including development of advanced grid archi-  
16 tectures and risk analysis; and

17           “(E) the development of tools and tech-  
18 nologies to coordinate data across relevant enti-  
19 ties to promote resilience and wildfire preven-  
20 tion in the planning, design, construction, oper-  
21 ation, and maintenance of transmission infra-  
22 structure;

23           “(F) analysis to predict the likelihood of  
24 extreme weather events to inform the planning,  
25 design, construction, operation, and mainte-

1 nance of transmission infrastructure in con-  
2 sultation with the National Oceanic and Atmos-  
3 pheric Administration; and

4 “(G) the commercial application of rel-  
5 evant technologies, such as distributed energy  
6 resources, microgrids, or other energy tech-  
7 nologies, to establish backup power for users or  
8 facilities affected by emergency power shutoffs.

9 “(3) ELIGIBLE ENTITIES.—The entities eligible  
10 to receive technical assistance for commercial appli-  
11 cation of technologies under this section include—

12 “(A) representatives of all sectors of the  
13 electric power industry, including electric utili-  
14 ties, trade organizations, and transmission and  
15 distribution system organizations, owners, and  
16 operators;

17 “(B) State and local governments and reg-  
18 ulatory authorities, including public utility com-  
19 missions;

20 “(C) tribal and Alaska Native govern-  
21 mental entities;

22 “(D) partnerships among entities under  
23 subparagraphs (A) through (C);

24 “(E) regional partnerships; and



1                   “(F) any other entities the Secretary  
2                   deems appropriate.

3                   “(4) AUTHORITY.—Nothing in this section shall  
4                   authorize the Secretary to require any entity to  
5                   adopt any model, tool, technology, plan, analysis, or  
6                   assessment.

7   **“SEC. 1315. BEST PRACTICES AND GUIDANCE DOCUMENTS**  
8                   **FOR ENERGY SECTOR CYBERSECURITY RE-**  
9                   **SEARCH.**

10                  “(a) IN GENERAL.—The Secretary, in coordination  
11 with appropriate Federal agencies, the Electricity Sub-  
12 sector Coordinating Council, standards development orga-  
13 nizations, State, tribal, local, and territorial governments,  
14 the private sector, public utility commissions, and other  
15 relevant stakeholders, shall coordinate the development of  
16 guidance documents for research, development, and dem-  
17 onstration activities to improve the cybersecurity capabili-  
18 ties of the energy sector through participating agencies.  
19 As part of these activities, the Secretary, in consultation  
20 with relevant Federal agencies, shall—

21                   “(1) facilitate stakeholder involvement to up-  
22                   date—

23                   “(A) the Roadmap to Achieve Energy De-  
24                   livery Systems Cybersecurity;

1 “(B) the Cybersecurity Procurement Lan-  
2 guage for Energy Delivery Systems, including  
3 developing guidance for—

4 “(i) contracting with third parties to  
5 conduct vulnerability testing for informa-  
6 tion systems used across the energy pro-  
7 duction, delivery, storage, and end use sys-  
8 tems;

9 “(ii) contracting with third parties  
10 that utilize transient devices to access in-  
11 formation systems; and

12 “(iii) managing supply chain risks;  
13 and

14 “(C) the Electricity Subsector Cybersecu-  
15 rity Capability Maturity Model, including the  
16 development of metrics to measure changes in  
17 cybersecurity readiness; and

18 “(2) develop voluntary guidance to improve dig-  
19 ital forensic analysis capabilities, including—

20 “(A) developing standardized terminology  
21 and monitoring processes; and

22 “(B) utilizing human factors research to  
23 develop more effective procedures for logging  
24 incident events; and

1           “(3) develop a mechanism to anonymize, aggre-  
2           gate, and share the testing results from cybersecu-  
3           rity test beds to facilitate technology improvements  
4           by public and private sector researchers.

5           “(b) BEST PRACTICES.—The Secretary, in collabora-  
6           tion with the Director of the National Institute of Stand-  
7           ards and Technology, the Director of the Cybersecurity  
8           and Infrastructure Security Agency, and other appropriate  
9           Federal agencies, shall convene relevant stakeholders and  
10          facilitate the development of—

11           “(1) consensus-based best practices to improve  
12          cybersecurity for—

13                   “(A) emerging energy technologies;

14                   “(B) distributed generation and storage  
15                   technologies, and other distributed energy re-  
16                   sources;

17                   “(C) electric vehicles and electric vehicle  
18                   charging stations; and

19                   “(D) other technologies and devices that  
20                   connect to the electric grid;

21           “(2) recommended cybersecurity designs and  
22           technical requirements that can be used by the pri-  
23           vate sector to design and build interoperable cyber-  
24           security features into technologies that connect to

1 the electric grid, including networked devices and  
2 components on distribution systems; and

3 “(3) technical analysis that can be used by the  
4 private sector in developing best practices for test  
5 beds and test bed methodologies that will enable re-  
6 producible testing of cybersecurity protections for in-  
7 formation systems, electronic devices, and other rel-  
8 evant components, software, and hardware across  
9 test beds.

10 “(c) REGULATORY AUTHORITY.—None of the activi-  
11 ties authorized in this section shall be construed to author-  
12 ize regulatory actions. Additionally, the voluntary stand-  
13 ards developed under this section shall not duplicate or  
14 conflict with mandatory reliability standards.

15 **“SEC. 1316. VULNERABILITY TESTING AND TECHNICAL AS-**  
16 **SISTANCE TO IMPROVE CYBERSECURITY.**

17 “(a) IN GENERAL.—The Secretary shall—

18 “(1) coordinate with appropriate Federal agen-  
19 cies and energy sector asset owners and operators,  
20 leveraging the research facilities and expertise of the  
21 National Laboratories, to assist entities in devel-  
22 oping testing capabilities by—

23 “(A) utilizing a range of methods to iden-  
24 tify vulnerabilities in physical and cyber sys-  
25 tems;

1           “(B) developing cybersecurity risk assess-  
2           ment tools and providing analyses and rec-  
3           ommendations to participating stakeholders;  
4           and

5           “(C) working with appropriate Federal  
6           agencies and stakeholders to develop methods to  
7           share anonymized and aggregated test results  
8           to assist relevant stakeholders in the energy  
9           sector, researchers, and the private sector to  
10          advance cybersecurity efforts, technologies, and  
11          tools;

12          “(2) in coordination with appropriate Federal  
13          agencies, collaborate with relevant stakeholders, in-  
14          cluding public utility commissions, to—

15               “(A) identify information, research, staff  
16               training, and analytical tools needed to evaluate  
17               cybersecurity issues and challenges in the en-  
18               ergy sector; and

19               “(B) facilitate the sharing of information  
20               and the development of tools identified under  
21               subparagraph (A);

22          “(3) coordinate with tribal governments to iden-  
23          tify information, research, and analysis tools needed  
24          by tribal governments to increase the cybersecurity  
25          of energy assets within their jurisdiction.

1 **“SEC. 1317. EDUCATION AND WORKFORCE TRAINING RE-**  
2 **SEARCH AND STANDARDS.**

3 “(a) IN GENERAL.—The Secretary shall support the  
4 development of an energy sector cybersecurity workforce  
5 through a program that—

6 “(1) facilitates collaboration between under-  
7 graduate and graduate students, researchers at the  
8 National Laboratories, and the civilian energy sec-  
9 tor;

10 “(2) prioritizes science and technology in areas  
11 relevant to the mission of the Department of Energy  
12 through the design and application of cybersecurity  
13 technologies for the energy sector;

14 “(3) develops, or facilitates private sector devel-  
15 opment of, voluntary cybersecurity training and re-  
16 training standards, lessons, and recommendations  
17 for the energy sector that minimize duplication of  
18 cybersecurity compliance training programs; and

19 “(4) maintains a public database of energy sec-  
20 tor cybersecurity education, training, and certifi-  
21 cation programs.

22 “(b) GRID RESILIENCE TECHNOLOGY TRAINING.—  
23 The Secretary shall support the development of the grid  
24 workforce through a training program that prioritizes ac-  
25 tivities that enhance the resilience of the electric grid and  
26 energy sector infrastructure, including training on the use

1 of tools, technologies, and methods developed under the  
2 grant program established in section 1314(b).

3 “(c) COLLABORATION.—In carrying out the program  
4 authorized in subsection (a) and (b), the Secretary shall  
5 coordinate with appropriate Federal agencies and leverage  
6 programs and activities carried out across the Department  
7 of Energy, other relevant Federal agencies, institutions of  
8 higher education, and other appropriate entities best suit-  
9 ed to provide national leadership on cybersecurity and grid  
10 resilience-related issues.

11 **“SEC. 1318. INTERAGENCY COORDINATION AND STRATEGIC**  
12 **PLAN FOR ENERGY SECTOR CYBERSECURITY**  
13 **RESEARCH.**

14 “(a) DUTIES.—The Secretary, in coordination with  
15 appropriate Federal agencies and the Energy Sector Gov-  
16 ernment Coordinating Council, shall—

17 “(1) review the most recent versions of the  
18 Roadmap to Achieve Energy Delivery Systems Cy-  
19 bersecurity and the Multi-Year Program Plan for  
20 Energy Sector Cybersecurity to identify crosscutting  
21 energy sector cybersecurity research needs and op-  
22 portunities for collaboration among Federal agencies  
23 and other relevant stakeholders;

1 “(2) identify interdisciplinary research, tech-  
2 nology, and tools that can be applied to cybersecu-  
3 rity challenges in the energy sector;

4 “(3) identify technology transfer opportunities  
5 to accelerate the development and commercial appli-  
6 cation of novel cybersecurity technologies, systems,  
7 and processes in the energy sector; and

8 “(4) develop a coordinated Interagency Stra-  
9 tegic Plan for research to advance cybersecurity ca-  
10 pabilities used in the energy sector that builds on  
11 the Roadmap to Achieve Energy Delivery Systems in  
12 Cybersecurity and the Multi-Year Program Plan for  
13 Energy Sector Cybersecurity.

14 “(b) INTERAGENCY STRATEGIC PLAN.—

15 “(1) SUBMITTAL.—The Interagency Strategic  
16 Plan developed under subsection (a)(4) shall be sub-  
17 mitted to Congress and made public within 12  
18 months after the date of enactment of this section.

19 “(2) CONTENTS.—The Interagency Strategic  
20 Plan shall include—

21 “(A) an analysis of how existing cybersecu-  
22 rity research efforts across the Federal Govern-  
23 ment are advancing the goals of the Roadmap  
24 to Achieve Energy Delivery Systems Cybersecu-



1           rity and the Multi-Year Program Plan for En-  
2           ergy Sector Cybersecurity;

3           “(B) recommendations for research areas  
4           that may advance the cybersecurity of the en-  
5           ergy sector;

6           “(C) an overview of existing and proposed  
7           public and private sector research efforts that  
8           address the topics outlined in paragraph (3);  
9           and

10          “(D) an overview of needed support for  
11          workforce training in cybersecurity for the en-  
12          ergy sector.

13          “(3) CONSIDERATIONS.—In developing the  
14          Interagency Strategic Plan, the Secretary, in coordi-  
15          nation with appropriate Federal agencies and the  
16          Energy Sector Government Coordinating Council,  
17          shall consider—

18               “(A) opportunities for human factors re-  
19               search to improve the design and effectiveness  
20               of cybersecurity devices, technologies, tools,  
21               processes, and training programs;

22               “(B) contributions of other disciplines to  
23               the development of innovative cybersecurity pro-  
24               cedures, devices, components, technologies, and  
25               tools;

1           “(C) opportunities for technology transfer  
2           programs to facilitate private sector develop-  
3           ment of cybersecurity procedures, devices, com-  
4           ponents, technologies, and tools for the energy  
5           sector; and

6           “(D) broader applications of the work done  
7           by relevant Federal agencies to advance the cy-  
8           bersecurity of information systems and data  
9           analytics systems for the energy sector.

10       “(c) PARTICIPATION.—For the purposes of carrying  
11 out this section, the Energy Sector Government Coordi-  
12 nating Council shall include representatives from Federal  
13 agencies with expertise in the energy sector, information  
14 systems, data analytics, cyber and physical systems, engi-  
15 neering, human factors research, human-machine inter-  
16 faces, high performance computing, big data and data  
17 analytics, or other disciplines considered appropriate by  
18 the Council Chair.

19       **“SEC. 1319. REPORT TO CONGRESS.**

20       “(a) BALANCING RISKS, INCREASING SECURITY, AND  
21 IMPROVING MODERNIZATION.—

22       “(1) STUDY.—The Secretary, in collaboration  
23 with appropriate Federal agencies and energy sector  
24 stakeholders, in order to provide recommendations

1       for additional research, development, demonstration,  
2       and commercial application activities, shall—

3               “(A) analyze physical and cyber attacks on  
4       infrastructure related to energy functions in the  
5       energy sector and identify cost-effective oppor-  
6       tunities to improve physical and cyber security  
7       for such infrastructure; and

8               “(B) examine the risks associated with in-  
9       creasing penetration of digital technologies in  
10      grid networks, particularly on the distribution  
11      grid.

12      “(2) CONTENT.—The study shall—

13              “(A) analyze processes, operational proce-  
14      dures, and other factors common among cyber  
15      attacks;

16              “(B) identify areas where human behavior  
17      plays a critical role in maintaining or compro-  
18      mising the security of a system;

19              “(C) recommend—

20                  “(i) changes to the design of devices,  
21      human-machine interfaces, technologies,  
22      tools, processes, or procedures to optimize  
23      security that do not require a change in  
24      human behavior; and

1 “(ii) training techniques to increase  
2 the capacity of employees to actively iden-  
3 tify, prevent, or neutralize the impact of  
4 cyber attacks;

5 “(D) evaluate existing engineering and  
6 technical design criteria and guidelines that in-  
7 corporate human factors research findings, and  
8 recommend criteria and guidelines for cyberse-  
9 curity tools that can be used to develop display  
10 systems for cybersecurity monitoring, such as  
11 alarms, user-friendly displays, and layouts;

12 “(E) evaluate the cybersecurity risks and  
13 benefits of various design and architecture op-  
14 tions for energy sector systems, networked grid  
15 systems and components, and automation sys-  
16 tems, including consideration of—

17 “(i) designs that include both digital  
18 and analog control devices and tech-  
19 nologies;

20 “(ii) different communication tech-  
21 nologies used to transfer information and  
22 data between control system devices, tech-  
23 nologies, and system operators;

24 “(iii) automated and human-in-the-  
25 loop devices and technologies;

1 “(iv) programmable versus non-  
2 programmable devices and technologies;

3 “(v) increased redundancy using dis-  
4 similar cybersecurity technologies; and

5 “(vi) grid architectures that use au-  
6 tonomous functions to limit control  
7 vulnerabilities; and

8 “(F) recommend methods or metrics to  
9 document changes in risks associated with sys-  
10 tem designs and architectures.

11 “(3) CONSULTATION.—In conducting the study,  
12 the Secretary shall consult with energy sector stake-  
13 holders, academic researchers, the private sector,  
14 and other relevant stakeholders.

15 “(4) REPORT.—Not later than 24 months after  
16 the date of enactment of this section, the Secretary  
17 shall submit the study to the Committee on Science,  
18 Space, and Technology of the House of Representa-  
19 tives and the Committee on Energy and Natural Re-  
20 sources of the Senate.

21 **“SEC. 1320. DEFINITIONS.**

22 “For purposes of sections 1313 through 1320:

23 “(1) BIG DATA.—The term ‘big data’ means  
24 datasets that require advanced analytical methods  
25 for their transformation into useful information.

1           “(2) HISTORICALLY BLACK COLLEGE OR UNI-  
2           VERSITY.—The term ‘historically Black college or  
3           university’ has the meaning given the term ‘part B  
4           institution’ in section 322(2) of the Higher Edu-  
5           cation Act of 1965 (29 U.S.C. 106(2)).

6           “(3) HUMAN FACTORS RESEARCH.—The term  
7           ‘human factors research’ means research on human  
8           performance in social and physical environments,  
9           and on the integration and interaction of humans  
10          with physical systems and computer hardware and  
11          software.

12          “(4) HUMAN-MACHINE INTERFACES.—The term  
13          ‘human-machine interfaces’ means technologies that  
14          present information to an operator or user about the  
15          state of a process or system, or accept human in-  
16          structions to implement an action, including visual-  
17          ization displays such as a graphical user interface.

18          “(5) MINORITY-SERVING INSTITUTION.—The  
19          term ‘minority-serving institution’ means an eligible  
20          institution under section 371(a) of the Higher Edu-  
21          cation Act of 1965 (20 U.S.C. 1067q(a)).

22          “(6) NATIONAL LABORATORY.—The term ‘na-  
23          tional laboratory’ has the meaning given the term in  
24          section 2 of the Energy Policy Act of 2005 (42  
25          U.S.C. 15801).

1           “(7) SECURITY VULNERABILITY.—The term  
2       ‘security vulnerability’ has the meaning given the  
3       term in section 102 of the Cybersecurity Information  
4       Sharing Act of 2015 (6 U.S.C. 1501).

5           “(8) TRANSIENT DEVICES.—The term ‘tran-  
6       sient devices’ means removable media, including  
7       floppy disks, compact disks, USB flash drives, exter-  
8       nal hard drives, mobile devices, and other devices  
9       that utilize wireless connections.”.

10       (b) AUTHORIZATION OF APPROPRIATIONS.—There  
11       are authorized to be appropriated to carry out the amend-  
12       ments made by subsection (a)—

- 13           (1) \$150,000,000 for fiscal year 2021;  
14           (2) \$157,500,000 for fiscal year 2022;  
15           (3) \$165,375,000 for fiscal year 2023;  
16           (4) \$173,645,000 for fiscal year 2024; and  
17           (5) \$182,325,000 for fiscal year 2025.

18       **SEC. 5342. CRITICAL INFRASTRUCTURE RESEARCH AND**  
19           **CONSTRUCTION.**

20       (a) IN GENERAL.—The Secretary of Energy shall  
21       carry out a program of research, development, and dem-  
22       onstration of technologies and tools to help ensure the re-  
23       silience and security of critical infrastructure.

1 (b) COORDINATION.—In carrying out the program  
2 under subsection (a), the Secretary shall leverage expertise  
3 and resources of and coordinate with—

4 (1) relevant programs and activities across the  
5 Department of Energy; and

6 (2) other relevant Federal agencies.

7 (c) ENERGY SECTOR CRITICAL INFRASTRUCTURE  
8 TEST FACILITY.—In carrying out the program under sub-  
9 section (a), the Secretary, in consultation with other ap-  
10 propriate Federal agencies, shall establish and operate an  
11 Energy Sector Critical Infrastructure Test Facility (re-  
12 ferred to in this section as the “Test Facility”) that allows  
13 for scalable physical and cyber performance testing to be  
14 conducted on industry-scale energy sector critical infra-  
15 structure systems. This facility shall include a focus on—

16 (1) cybersecurity test beds; and

17 (2) electric grid test beds.

18 (d) SELECTION.—The Secretary shall select the Test  
19 Facility under this section on a competitive, merit-re-  
20 viewed basis. The Secretary shall consider applications  
21 from National Laboratories, institutions of higher edu-  
22 cation, multi-institutional collaborations, and other appro-  
23 priate entities.



1 (e) DURATION.—The Test Facility established under  
2 this section shall receive support for a period of not more  
3 than 5 years, subject to the availability of appropriations.

4 (f) RENEWAL.—Upon the expiration of any period of  
5 support of the Test Facility, the Secretary may renew sup-  
6 port for the Test Facility, on a merit-reviewed basis, for  
7 a period of not more than 5 years.

8 (g) TERMINATION.—Consistent with the existing au-  
9 thorities of the Department, the Secretary may terminate  
10 the Test Facility for cause during the performance period.

11 **SECTION 5343. CONFORMING AMENDMENT.**

12 Section 1(b) of the Energy Independence and Secu-  
13 rity Act of 2007 is amended in the table of contents by  
14 adding after the matter relating to section 1312 (as added  
15 by this Act) the following:

“Sec. 1313. Energy sector security research, development, and demonstration  
program.

“Sec. 1314. Grid resilience and emergency response.

“Sec. 1315. Best practices and guidance documents for energy sector cyberse-  
curity research.

“Sec. 1316. Vulnerability testing and technical assistance to improve cybersecu-  
rity.

“Sec. 1317. Education and workforce training research and standards.

“Sec. 1318. Interagency coordination and strategic plan for energy sector cy-  
bersecurity research.

“Sec. 1319. Report to Congress.

“Sec. 1320. Definitions.”.

16 **Subtitle D—Tribal Energy**

17 **SEC. 5401. INDIAN ENERGY.**

18 (a) DEFINITION OF INDIAN LAND.—Section 2601(2)  
19 of the Energy Policy Act of 1992 (25 U.S.C. 3501(2))  
20 is amended—

1 (1) in subparagraph (B)(iii), by striking “and”;

2 (2) in subparagraph (C), by striking “land.”

3 and inserting “land;”; and

4 (3) by adding at the end the following subpara-

5 graphs:

6 “(D) any land located in a census tract in

7 which the majority of residents are Natives (as

8 defined in section 3(b) of the Alaska Native

9 Claims Settlement Act (43 U.S.C. 1602(b));

10 and

11 “(E) any land located in a census tract in

12 which the majority of residents are persons who

13 are enrolled members of a federally recognized

14 Tribe or village.”.

15 (b) REDUCTION OF COST SHARE.—Section

16 2602(b)(5) of the Energy Policy Act of 1992 (25 U.S.C.

17 3502(b)(5)) is amended by adding at the end the following

18 subparagraphs:

19 “(D) The Secretary of Energy may reduce any

20 applicable cost share required of an Indian tribe,

21 intertribal organization, or tribal energy development

22 organization in order to receive a grant under this

23 subsection to not less than 10 percent if the Indian

24 tribe, intertribal organization, or tribal energy devel-

1        opment organization meets criteria developed by the  
2        Secretary of Energy, including financial need.

3            “(E) Section 988 of the Energy Policy Act of  
4        2005 (42 U.S.C. 16352) shall not apply to assist-  
5        ance provided under this subsection.”.

6        (c) AUTHORIZATION.—Section 2602(b)(7) of the En-  
7        ergy Policy Act of 1992 (25 U.S.C. 3502(b)(7)) is amend-  
8        ed by striking “\$20,000,000 for each of fiscal years 2006  
9        through 2016” and inserting “\$30,000,000 for each of fis-  
10       cal years 2021 through 2025”.

11    **SEC. 5402. REPORT ON ELECTRICITY ACCESS AND RELI-**  
12                                    **ABILITY.**

13        (a) ASSESSMENT.—The Secretary of Energy shall  
14        conduct an assessment of the status of access to electricity  
15        by households residing in Tribal communities or on Indian  
16        land, and the reliability of electric service available to  
17        households residing in Tribal communities or on Indian  
18        land, as compared to the status of access to and reliability  
19        of electricity within neighboring States or within the State  
20        in which Indian land is located.

21        (b) CONSULTATION.—The Secretary of Energy shall  
22        consult with Indian Tribes, Tribal organizations, the  
23        North American Electricity Reliability Corporation, and  
24        the Federal Energy Regulatory Commission in the devel-  
25        opment and conduct of the assessment under subsection

1 (a). Indian Tribes and Tribal organizations shall have the  
2 opportunity to review and make recommendations regard-  
3 ing the development of the assessment and the findings  
4 of the assessment, prior to the submission of the report  
5 under subsection (c).

6 (c) REPORT.—Not later than 18 months after the  
7 date of enactment of this Act, the Secretary of Energy  
8 shall submit to the Committee on Energy and Commerce  
9 of the House of Representatives and the Committee on  
10 Energy and Natural Resources of the Senate a report on  
11 the results of the assessment conducted under subsection  
12 (a), which shall include—

13 (1) a description of generation, transmission,  
14 and distribution assets available to provide electricity  
15 to households residing in Tribal communities or on  
16 Indian land;

17 (2) a survey of the retail and wholesale prices  
18 of electricity available to households residing in  
19 Tribal communities or on Indian land;

20 (3) a description of participation of Tribal  
21 members in the electric utility workforce, including  
22 the workforce for construction and maintenance of  
23 renewable energy resources and distributed energy  
24 resources;

1           (4) the percentage of households residing in  
2       Tribal communities or on Indian land that do not  
3       have access to electricity;

4           (5) the potential of distributed energy resources  
5       to provide electricity to households residing in Tribal  
6       communities or on Indian land;

7           (6) the potential for tribally-owned electric utili-  
8       ties or electric utility assets to participate in or ben-  
9       efit from regional electricity markets;

10          (7) a description of the barriers to providing ac-  
11       cess to electric service to households residing in  
12       Tribal communities or on Indian land; and

13          (8) recommendations to improve access to and  
14       reliability of electric service for households residing  
15       in Tribal communities or on Indian land.

16       (d) DEFINITIONS.—In this section:

17           (1) TRIBAL MEMBER.—The term “Tribal mem-  
18       ber” means a person who is an enrolled member of  
19       a federally recognized Tribe or village.

20           (2) TRIBAL COMMUNITY.—The term “Tribal  
21       community” means a community in a United States  
22       census tract in which the majority of residents are  
23       persons who are enrolled members of a federally rec-  
24       ognized Tribe or village.

1       **TITLE VI—TRANSPORTATION**  
2           **Subtitle A—Diesel Emissions**  
3                   **Reduction**

4       **SEC. 6101. REAUTHORIZATION OF DIESEL EMISSIONS RE-**  
5                   **DUCTION PROGRAM.**

6           Section 797(a) of the Energy Policy Act of 2005 (42  
7       U.S.C. 16137(a)) is amended by striking “\$100,000,000  
8       for each of fiscal years 2012 through 2016” and inserting  
9       “\$500,000,000 for each of fiscal years 2021 through  
10      2025”.

11       **Subtitle B—Clean School Bus**  
12                   **Program**

13       **SEC. 6201. REAUTHORIZATION OF CLEAN SCHOOL BUS PRO-**  
14                   **GRAM.**

15           (a) DEFINITIONS.—

16                   (1) ALTERNATIVE FUEL.—Section 741(a)(2) of  
17       the Energy Policy Act of 2005 (42 U.S.C. 16091(a))  
18       is amended—

19                           (A) in subparagraph (B), by striking “or”  
20                           after the semicolon;

21                           (B) in subparagraph (C), by striking the  
22                           period at the end and inserting “; or”; and

23                           (C) by adding at the end the following new  
24                           subparagraph:

25                                   “(D) electricity.”.

1           (2) CLEAN SCHOOL BUS.—Paragraph (3) of  
2           section 741(a) of the Energy Policy Act of 2005 (42  
3           U.S.C. 16091(a)) is amended to read as follows:

4           “(3) CLEAN SCHOOL BUS.—The term ‘clean  
5           school bus’ means—

6           “(A) a school bus (as the term ‘schoolbus’  
7           is defined in section 30125(a) of title 49,  
8           United States Code) that—

9           “(i) is operated solely on an alter-  
10          native fuel; and

11          “(ii) meets or exceeds Federal vehicle  
12          emission standards for medium-duty pas-  
13          senger vehicles applicable to the model  
14          year in which the school bus is manufac-  
15          tured; or

16          “(B) a zero-emission school bus.”.

17          (3) OTHER DEFINITIONS.—Section 741(a) of  
18          the Energy Policy Act of 2005 (42 U.S.C.  
19          16091(a)), as amended, is further amended—

20                 (A) by redesignating paragraphs (4), (5),  
21                 and (6) as paragraphs (5), (9), and (10), re-  
22                 spectively;

23                 (B) by inserting after paragraph (3) the  
24                 following:

1           “(4) COMMUNITY OF COLOR.—The term ‘com-  
2           munity of color’ means any geographically distinct  
3           area the population of color of which is higher than  
4           the average population of color of the State in which  
5           the community is located.”;

6           (C) by inserting after paragraph (5), as re-  
7           designated, the following:

8           “(6) INDIGENOUS COMMUNITY.—The term ‘in-  
9           digenous community’ means—

10           “(A) a federally recognized Indian Tribe;

11           “(B) a State-recognized Indian Tribe;

12           “(C) an Alaska Native or Native Hawaiian  
13           community or organization; and

14           “(D) any other community of indigenous  
15           people, including communities in other coun-  
16           tries.

17           “(7) LOW INCOME.—The term ‘low income’  
18           means an annual household income equal to, or less  
19           than, the greater of—

20           “(A) an amount equal to 80 percent of the  
21           median income of the area in which the house-  
22           hold is located, as reported by the Department  
23           of Housing and Urban Development; and

24           “(B) 200 percent of the Federal poverty  
25           line.



1           “(8) LOW-INCOME COMMUNITY.—The term  
2           ‘low-income community’ means any census block  
3           group in which 30 percent or more of the population  
4           are individuals with low income.”; and

5           (D) by adding at the end the following:

6           “(11) ZERO-EMISSION SCHOOL BUS.—The term  
7           ‘zero-emission school bus’ means a school bus (as  
8           the term ‘schoolbus’ is defined in section 30125(a)  
9           of title 49, United States Code) with a drivetrain  
10          that produces, under any possible operational mode  
11          or condition, zero exhaust emission of—

12           “(A) any air pollutant that is listed pursu-  
13          ant to section 108(a) of the Clean Air Act (42  
14          U.S.C. 7407(a)) (or any precursor to such an  
15          air pollutant); or

16           “(B) any greenhouse gas.”.

17          (b) PROGRAM FOR RETROFIT OR REPLACEMENT OF  
18          CERTAIN EXISTING SCHOOL BUSES WITH CLEAN  
19          SCHOOL BUSES.—

20           (1) NATIONAL GRANT, REBATE, AND LOAN PRO-  
21          GRAMS.—

22           (A) IN GENERAL.—Section 741(b)(1)(A) of  
23          the Energy Policy Act of 2005 (42 U.S.C.  
24          16091(b)(1)(A)) is amended by inserting after  
25          “awarding grants” the following: “, rebates,

1 and low-cost revolving loans, as determined by  
2 the Administrator, including through contracts  
3 pursuant to subsection (d),”.

4 (B) CONFORMING CHANGES.—Section 741  
5 of the Energy Policy Act of 2005 (42 U.S.C.  
6 16091) is amended—

7 (i) in subsection (a)(4)(B), by striking  
8 “grant funds” and inserting “award  
9 funds”;

10 (ii) in subsection (b)(1)(B), by strik-  
11 ing “awarding grants” each place it ap-  
12 pears and inserting “making awards”;

13 (iii) in the heading of subsection  
14 (b)(2), by striking “GRANT APPLICATIONS”  
15 and inserting “AWARD APPLICATIONS”;

16 (iv) in subsection (b)(2)(A), by strik-  
17 ing “grant applications” and inserting  
18 “award applications”;

19 (v) in subsection (b)(3)(A), by strik-  
20 ing “grant” and insert “award”;

21 (vi) and (b)(4)—

22 (I) in the paragraph heading, by  
23 striking “GRANTS” and inserting  
24 “AWARDS”; and

- 1 (II) by striking “award grants”  
2 and inserting “make awards”;  
3 (vii) in subsection (b)(7)—  
4 (I) by striking “grant awards”  
5 and inserting “awards”; and  
6 (II) by striking “grant funding”  
7 and inserting “funding”;  
8 (viii) in subsection (b)(8)(A)(ii)—  
9 (I) in subclauses (I) and (II), by  
10 striking “grant applications” each  
11 place it appears and inserting “award  
12 applications”; and  
13 (II) in subclause (III)—  
14 (aa) by striking “grants  
15 awarded” and inserting “awards  
16 made”; and  
17 (bb) by striking “grant re-  
18 cipients” and inserting “award  
19 recipients”; and  
20 (ix) in subsection (c)(3)—  
21 (I) in subparagraph (A)—  
22 (aa) by striking “grant re-  
23 cipients” and inserting “award  
24 recipients”; and

1 (bb) by striking “grants”  
2 and inserting “awards”; and  
3 (II) in subparagraph (C), by  
4 striking “grant program” and insert-  
5 ing “award program”.

6 (2) PRIORITY OF AWARD APPLICATIONS.—Sec-  
7 tion 741(b)(2) of the Energy Policy Act of 2005 (42  
8 U.S.C. 16091(b)(2)) is amended—

9 (A) in subparagraph (A)—

10 (i) by striking “1977” and inserting  
11 “2007”; and

12 (ii) by inserting before the period at  
13 the end “with clean school buses”; and

14 (B) by amending subparagraph (B) to read  
15 as follows:

16 “(B) RETROFITTING.—In the case of  
17 award applications to retrofit school buses, the  
18 Administrator shall give highest priority to ap-  
19 plicants that propose to retrofit school buses  
20 manufactured before model year 2010 to be-  
21 come clean school buses.”.

22 (3) USE OF SCHOOL BUS FLEET.—Section  
23 741(b)(3)(B) of the Energy Policy Act of 2005 (42  
24 U.S.C. 16091(b)(3)(B)) is amended by inserting  
25 “charged,” after “operated,”.

1           (4) REPLACEMENT AWARDS.—Paragraph (5) of  
2           section 741(b) of the Energy Policy Act of 2005 (42  
3           U.S.C. 16091(b)) is amended to read as follows:

4           “(5) REPLACEMENT AWARDS.—In the case of  
5           awards to replace school buses—

6           “(A) the Administrator may make awards  
7           for up to—

8           “(i) 100 percent of the replacement  
9           costs for clean school buses that are zero-  
10          emission school buses; and

11          “(ii) 60 percent of the replacement  
12          costs for other eligible clean school buses;  
13          and

14          “(B) such replacement costs may include  
15          the costs of acquiring the clean school buses  
16          and charging and fueling infrastructure.”.

17          (5) ULTRA LOW-SULFUR DIESEL FUEL.—Sec-  
18          tion 741(b) of the Energy Policy Act of 2005 (42  
19          U.S.C. 16091(b)) is amended—

20                 (A) by striking paragraph (6); and

21                 (B) by redesignating paragraph (7) as  
22          paragraph (6).

23          (6) SCRAPPAGE.—Section 741(b) of the Energy  
24          Policy Act of 2005 (42 U.S.C. 16091(b)) is further

1       amended by inserting after paragraph (6), as redes-  
2       ignated, the following new paragraph:

3           “(7) SCRAPPAGE.—In the case of an award  
4       under this section for the replacement of a school  
5       bus or a retrofit including installation of a new en-  
6       gine, the Administrator shall require the recipient of  
7       the award to verify that the replaced bus, or the en-  
8       gine of a retrofitted bus that was removed, was re-  
9       turned to the supplier for remanufacturing to a  
10      more stringent set of engine emissions standards or  
11      for scrappage.”.

12      (c) EDUCATION.—Paragraph (1) of section 741(c) of  
13      the Energy Policy Act of 2005 (42 U.S.C. 16091(c)) is  
14      amended to read as follows:

15           “(1) IN GENERAL.—Not later than 90 days  
16      after the date of enactment of the Clean Economy  
17      Jobs and Innovation Act, the Administrator shall de-  
18      velop an education outreach program to promote and  
19      explain the award program under subsection (b).”.

20      (d) CONTRACT PROGRAMS; ADMINISTRATIVE  
21      COSTS.—Section 741 of the Energy Policy Act of 2005  
22      (42 U.S.C. 16091) is amended—

23           (1) by redesignating subsection (d) as sub-  
24      section (f); and

1           (2) by inserting after subsection (c) the fol-  
2       lowing new subsections:

3       “(d) CONTRACT PROGRAMS.—

4           “(1) AUTHORITY.—In addition to the use of  
5       contracting authority otherwise available to the Ad-  
6       ministrator, the Administrator may enter into con-  
7       tracts with eligible contractors described in para-  
8       graph (2) for awarding rebates and low-cost revolv-  
9       ing loans pursuant to subsection (b)(1).

10          “(2) ELIGIBLE CONTRACTORS.—A contractor is  
11       an eligible contractor described in this paragraph if  
12       the contractor is a for-profit, not-for-profit, or non-  
13       profit entity that has the capacity—

14           “(A) to sell clean school buses or equip-  
15       ment to, or to arrange financing for, individuals  
16       or entities that own a school bus or fleet of  
17       school buses; or

18           “(B) to upgrade school buses or their  
19       equipment with verified or Environmental Pro-  
20       tection Agency-certified engines or technologies,  
21       or to arrange financing for such upgrades.

22          “(e) ADMINISTRATIVE COSTS.—The Administrator  
23       may not use, for the administrative costs of carrying out  
24       this section, more than one percent of the amounts made  
25       available to carry out this section for any fiscal year.”.

1       (e) AUTHORIZATION OF APPROPRIATIONS.—Sub-  
2 section (f), as redesignated, of section 741 of the Energy  
3 Policy Act of 2005 (42 U.S.C. 16091) is amended to read  
4 as follows:

5       “(f) AUTHORIZATION OF APPROPRIATIONS.—There  
6 is authorized to be appropriated to the Administrator to  
7 carry out this section, to remain available until expended,  
8 \$130,000,000 for each of fiscal years 2021 through 2025,  
9 of which not less than \$52,000,000 each such fiscal year  
10 shall be used for awards under this section to eligible re-  
11 cipients proposing to replace or retrofit school buses to  
12 serve a community of color, indigenous community, low-  
13 income community, or any community located in an air  
14 quality area designated pursuant to section 107 of the  
15 Clean Air Act (42 U.S.C. 7407) as nonattainment.”.

16       (f) TECHNICAL AMENDMENT TO STRIKE REDUN-  
17 DANT AUTHORIZATION.—The Safe, Accountable, Flexible,  
18 Efficient Transportation Equity Act: A Legacy for Users  
19 (commonly referred to as “SAFETEA-LU”) is amended  
20 by striking section 6015 (42 U.S.C. 16091a).



1     **Subtitle C—Clean Cities Coalition**  
2                     **Program**

3     **SEC. 6301. CLEAN CITIES COALITION PROGRAM.**

4             (a) IN GENERAL.—The Secretary shall carry out a  
5     program to be known as the Clean Cities Coalition Pro-  
6     gram.

7             (b) PROGRAM ELEMENTS.—In carrying out the pro-  
8     gram under subsection (a), the Secretary shall—

9                 (1) establish criteria for designating local and  
10     regional Clean Cities Coalitions;

11                (2) designate local and regional Clean Cities  
12     Coalitions that the Secretary determines meet the  
13     criteria established under paragraph (1);

14                (3) make awards to each designated Clean Cit-  
15     ies Coalition for administrative and program ex-  
16     penses of the coalition;

17                (4) make competitive awards to designated  
18     Clean Cities Coalitions for projects and activities de-  
19     scribed in subsection (c);

20                (5) provide technical assistance and training to  
21     designated Clean Cities Coalitions;

22                (6) provide opportunities for communication  
23     and sharing of best practices among designated  
24     Clean Cities Coalitions; and

1           (7) maintain, and make available to the public,  
2           a centralized database of information included in the  
3           reports submitted under subsection (d).

4           (c) PROJECTS AND ACTIVITIES.—Projects and activi-  
5           ties eligible for awards under subsection (b)(4) are  
6           projects and activities that reduce petroleum consumption,  
7           improve air quality, promote energy and economic secu-  
8           rity, and encourage deployment of a diverse, domestic sup-  
9           ply of alternative fuels in the transportation sector by—

10           (1) encouraging the purchase and use of alter-  
11           native fuel vehicles and alternative fuels, including  
12           by fleet managers;

13           (2) expediting the establishment of local, re-  
14           gional, and national infrastructure to fuel alternative  
15           fuel vehicles;

16           (3) advancing the use of other petroleum fuel  
17           reduction technologies and strategies;

18           (4) conducting outreach and education activities  
19           to advance the use of alternative fuels and alter-  
20           native fuel vehicles;

21           (5) providing training and technical assistance  
22           and tools to users that adopt petroleum fuel reduc-  
23           tion technologies; or

24           (6) collaborating with and training officials and  
25           first responders with responsibility for permitting

1 and enforcing fire, building, and other safety codes  
2 related to the deployment and use of alternative  
3 fuels or alternative fuel vehicles.

4 (d) ANNUAL REPORT.—Each designated Clean Cities  
5 Coalition shall submit an annual report to the Secretary  
6 on the activities and accomplishments of the coalition.

7 (e) DEFINITIONS.—In this section:

8 (1) ALTERNATIVE FUEL.—The term “alter-  
9 native fuel” has the meaning given such term in sec-  
10 tion 32901 of title 49, United States Code.

11 (2) ALTERNATIVE FUEL VEHICLE.—The term  
12 “alternative fuel vehicle” means any vehicle that is  
13 capable of operating, partially or exclusively, on an  
14 alternative fuel.

15 (3) SECRETARY.—The term “Secretary” means  
16 the Secretary of Energy.

17 (f) FUNDING.—

18 (1) AUTHORIZATION OF APPROPRIATIONS.—  
19 There are authorized to be appropriated to carry out  
20 this section—

21 (A) \$50,000,000 for fiscal year 2021;

22 (B) \$60,000,000 for fiscal year 2022;

23 (C) \$75,000,000 for fiscal year 2023;

24 (D) \$90,000,000 for fiscal year 2024; and

25 (E) \$100,000,000 for fiscal year 2025.

1           (2) ALLOCATIONS.—The Secretary shall allo-  
2       cate funds made available to carry out this section  
3       in each fiscal year as follows:

4           (A) Thirty percent of such funds shall be  
5       distributed as awards under subsection (b)(3).

6           (B) Fifty percent of such funds shall be  
7       distributed as competitive awards under sub-  
8       section (b)(4).

9           (C) Twenty percent of such funds shall be  
10      used to carry out the duties of the Secretary  
11      under this section.

12           **Subtitle D—Renewable Fuel**  
13           **Standard Integrity**

14   **SEC. 6401. ANNUAL DEADLINE FOR PETITIONS BY SMALL**  
15           **REFINERIES FOR EXEMPTIONS FROM RE-**  
16           **NEWABLE FUEL REQUIREMENTS.**

17       (a) DEADLINE.—Notwithstanding any other provi-  
18      sion of law, petitions under section 211(o)(9) of the Clean  
19      Air Act (42 U.S.C. 7545(o)(9)) for an exemption from the  
20      requirements of section 211(o)(2) of such Act (42 U.S.C.  
21      7545(o)(2)) shall be submitted to the Administrator of the  
22      Environmental Protection Agency by June 1 of the year  
23      preceding the year when such requirements would other-  
24      wise be in effect.

1 (b) EFFECT OF FAILURE TO MEET DEADLINE.—If  
2 a petition described in subsection (a) is not submitted by  
3 the deadline specified in such subsection, the petition shall  
4 be ineligible for consideration or approval.

5 **SEC. 6402. INFORMATION IN PETITION SUBJECT TO PUBLIC**  
6 **DISCLOSURE.**

7 (a) IN GENERAL.—The information described in sub-  
8 section (b) in any submission to the Environmental Pro-  
9 tection Agency by any person, including a small refinery,  
10 with respect to a petition under section 211(o)(9)(B) of  
11 the Clean Air Act (42 U.S.C. 7545(o)(9)(B))—

12 (1) shall not be deemed to be a trade secret or  
13 confidential information; and

14 (2) shall be subject to public disclosure under  
15 section 552 of title 5, United States Code.

16 (b) DESCRIBED INFORMATION.—The information de-  
17 scribed in this subsection is—

18 (1) the name of the small refinery requesting  
19 an extension of an exemption;

20 (2) the number of gallons of renewable fuel that  
21 will not be contained in fuel pursuant to section  
22 211(o)(2) of the Clean Air Act (42 U.S.C.  
23 7545(o)(2)) as a result of the extension if the exten-  
24 sion is granted; and

1           (3) the compliance year for which the extension  
2       is requested.

3       (c) APPLICABILITY.—Subsection (a) applies only with  
4       respect to information submitted with respect to a petition  
5       under section 211(o)(9)(B) of the Clean Air Act (42  
6       U.S.C. 7545(o)(9)(B)) for calendar year 2021 or a subse-  
7       quent calendar year.

## 8           **Subtitle E—EV Infrastructure**

### 9       **SEC. 6501. DEFINITIONS.**

10       In this subtitle:

11           (1) ELECTRIC VEHICLE SUPPLY EQUIPMENT.—

12       The term “electric vehicle supply equipment” means  
13       any conductors, including ungrounded, grounded,  
14       and equipment grounding conductors, electric vehicle  
15       connectors, attachment plugs, and all other fittings,  
16       devices, power outlets, or apparatuses installed spe-  
17       cifically for the purpose of delivering energy to an  
18       electric vehicle.

19           (2) SECRETARY.—The term “Secretary” means  
20       the Secretary of Energy.

21           (3) UNDERSERVED OR DISADVANTAGED COM-  
22       MUNITY.—The term “underserved or disadvantaged  
23       community” means—

1 (A) a community located in a ZIP code  
2 that includes a census tract that is identified  
3 as—

4 (i) a low-income community; or

5 (ii) a community of color; or

6 (B) any other community that the Sec-  
7 retary determines is disproportionately vulner-  
8 able to, or bears a disproportionate burden of,  
9 any combination of economic, social, and envi-  
10 ronmental stressors.

11 **SEC. 6502. ELECTRIC VEHICLE SUPPLY EQUIPMENT RE-**  
12 **BATE PROGRAM.**

13 (a) REBATE PROGRAM.—Not later than January 1,  
14 2022, the Secretary shall establish a rebate program to  
15 provide rebates for covered expenses associated with pub-  
16 licly accessible electric vehicle supply equipment (in this  
17 section referred to as the “rebate program”).

18 (b) REBATE PROGRAM REQUIREMENTS.—

19 (1) ELIGIBLE ENTITIES.—A rebate under the  
20 rebate program may be made to an individual, a  
21 State, local, Tribal, or Territorial government, a pri-  
22 vate entity, a not-for-profit entity, a nonprofit entity,  
23 or a metropolitan planning organization.

24 (2) ELIGIBLE EQUIPMENT.—

1 (A) IN GENERAL.—Not later than 180  
2 days after the date of the enactment of this  
3 Act, the Secretary shall publish and maintain  
4 on the Department of Energy internet website  
5 a list of electric vehicle supply equipment that  
6 is eligible for the rebate program.

7 (B) UPDATES.—The Secretary may, by  
8 regulation, add to, or otherwise revise, the list  
9 of electric vehicle supply equipment under sub-  
10 paragraph (A) if the Secretary determines that  
11 such addition or revision will likely lead to—

12 (i) greater usage of electric vehicle  
13 supply equipment;

14 (ii) greater access to electric vehicle  
15 supply equipment by users; or

16 (iii) an improved experience for users  
17 of electric vehicle supply equipment.

18 (C) LOCATION REQUIREMENT.—To be eli-  
19 gible for the rebate program, the electric vehicle  
20 supply equipment described in subparagraph  
21 (A) shall be installed—

22 (i) in the United States;

23 (ii) on property—

24 (I) owned by the eligible entity  
25 under paragraph (1); or



1 (II) on which the eligible entity  
2 under paragraph (1) has authority to  
3 install electric vehicle supply equip-  
4 ment; and

5 (iii) at a location that is—

6 (I) a multi-unit housing struc-  
7 ture;

8 (II) a workplace;

9 (III) a commercial location; or

10 (IV) open to the public for a  
11 minimum of 12 hours per day;

12 (3) APPLICATION.—

13 (A) IN GENERAL.—An eligible entity under  
14 paragraph (1) may submit to the Secretary an  
15 application for a rebate under the rebate pro-  
16 gram. Such application shall include—

17 (i) the estimated cost of covered ex-  
18 penses to be expended on the electric vehi-  
19 cle supply equipment that is eligible under  
20 paragraph (2);

21 (ii) the estimated installation cost of  
22 the electric vehicle supply equipment that  
23 is eligible under paragraph (2);

24 (iii) the global positioning system lo-  
25 cation, including the integer number of de-

1           grees, minutes, and seconds, where such  
2           electric vehicle supply equipment is to be  
3           installed, and identification of whether  
4           such location is—

5                   (I) a multi-unit housing struc-  
6                   ture;

7                   (II) a workplace;

8                   (III) a commercial location; or

9                   (IV) open to the public for a  
10           minimum of 12 hours per day;

11                   (iv) the technical specifications of  
12           such electric vehicle supply equipment, in-  
13           cluding the maximum power voltage and  
14           amperage of such equipment; and

15                   (v) any other information determined  
16           by the Secretary to be necessary for a com-  
17           plete application.

18           (B) REVIEW PROCESS.—The Secretary  
19           shall review an application for a rebate under  
20           the rebate program and approve an eligible en-  
21           tity under paragraph (1) to receive such rebate  
22           if the application meets the requirements of the  
23           rebate program under this subsection.

24           (C) NOTIFICATION TO ELIGIBLE ENTITY.—

25           Not later than 1 year after the date on which

1 the eligible entity under paragraph (1) applies  
2 for a rebate under the rebate program, the Sec-  
3 retary shall notify the eligible entity whether  
4 the eligible entity will be awarded a rebate  
5 under the rebate program following the submis-  
6 sion of additional materials required under  
7 paragraph (5).

8 (4) REBATE AMOUNT.—

9 (A) IN GENERAL.—Except as provided in  
10 subparagraph (B), the amount of a rebate made  
11 under the rebate program for each charging  
12 unit shall be the lesser of—

13 (i) 75 percent of the applicable cov-  
14 ered expenses;

15 (ii) \$2,000 for covered expenses asso-  
16 ciated with the purchase and installation of  
17 non-networked level 2 charging equipment;

18 (iii) \$4,000 for covered expenses asso-  
19 ciated with the purchase and installation of  
20 networked level 2 charging equipment; or

21 (iv) \$100,000 for covered expenses as-  
22 sociated with the purchase and installation  
23 of networked direct current fast charging  
24 equipment.

1 (B) REBATE AMOUNT FOR REPLACEMENT  
2 EQUIPMENT.—A rebate made under the rebate  
3 program for replacement of pre-existing electric  
4 vehicle supply equipment at a single location  
5 shall be the lesser of—

6 (i) 75 percent of the applicable cov-  
7 ered expenses;

8 (ii) \$1,000 for covered expenses asso-  
9 ciated with the purchase and installation of  
10 non-networked level 2 charging equipment;

11 (iii) \$2,000 for covered expenses asso-  
12 ciated with the purchase and installation of  
13 networked level 2 charging equipment; or

14 (iv) \$25,000 for covered expenses as-  
15 sociated with the purchase and installation  
16 of networked direct current fast charging  
17 equipment.

18 (5) DISBURSEMENT OF REBATE.—

19 (A) IN GENERAL.—The Secretary shall  
20 disburse a rebate under the rebate program to  
21 an eligible entity under paragraph (1), following  
22 approval of an application under paragraph (3),  
23 if such entity submits the materials required  
24 under subparagraph (B).

1 (B) MATERIALS REQUIRED FOR DISBURSE-  
2 MENT OF REBATE.—Not later than one year  
3 after the date on which the eligible entity under  
4 paragraph (1) receives notice under paragraph  
5 (3)(C) that the eligible entity has been ap-  
6 proved for a rebate, such eligible entity shall  
7 submit to the Secretary the following—

8 (i) a record of payment for covered  
9 expenses expended on the installation of  
10 the electric vehicle supply equipment that  
11 is eligible under paragraph (2);

12 (ii) a record of payment for the elec-  
13 tric vehicle supply equipment that is eligi-  
14 ble under paragraph (2);

15 (iii) the global positioning system lo-  
16 cation of where such electric vehicle supply  
17 equipment was installed and identification  
18 of whether such location is—

19 (I) a multi-unit housing struc-  
20 ture;

21 (II) a workplace;

22 (III) a commercial location; or

23 (IV) open to the public for a  
24 minimum of 12 hours per day;

1 (iv) the technical specifications of the  
2 electric vehicle supply equipment that is el-  
3 igible under paragraph (2), including the  
4 maximum power voltage and amperage of  
5 such equipment; and

6 (v) any other information determined  
7 by the Secretary to be necessary.

8 (C) AGREEMENT TO MAINTAIN.—To be eli-  
9 gible for a rebate under the rebate program, an  
10 eligible entity under paragraph (1) shall enter  
11 into an agreement with the Secretary to main-  
12 tain the electric vehicle supply equipment that  
13 is eligible under paragraph (2) in a satisfactory  
14 manner for not less than 5 years after the date  
15 on which the eligible entity under paragraph (1)  
16 receives the rebate under the rebate program.

17 (D) EXCEPTION.—The Secretary shall not  
18 disburse a rebate under the rebate program if  
19 materials submitted under subparagraph (B) do  
20 not meet the same global positioning system lo-  
21 cation and technical specifications for the elec-  
22 tric vehicle supply equipment that is eligible  
23 under paragraph (2) provided in an application  
24 under paragraph (3).

1           (6) MULTI-PORT CHARGERS.—An eligible entity  
2       under paragraph (1) shall be awarded a rebate  
3       under the rebate program for covered expenses relat-  
4       ing to the purchase and installation of a multi-port  
5       charger based on the number of publicly accessible  
6       charging ports, with each subsequent port after the  
7       first port being eligible for 50 percent of the full re-  
8       bate amount.

9           (7) NETWORKED DIRECT CURRENT FAST  
10       CHARGING.—Of amounts appropriated to carry out  
11       the rebate program, not more than 40 percent may  
12       be used for rebates of networked direct current fast  
13       charging equipment.

14          (8) HYDROGEN FUEL CELL REFUELING INFRA-  
15       STRUCTURE.—Hydrogen refueling equipment shall  
16       be eligible for a rebate under the rebate program as  
17       though it were networked direct current fast charg-  
18       ing equipment. All requirements related to public ac-  
19       cessibility of installed locations shall apply.

20          (9) REPORT.—Not later than 3 years after the  
21       first date on which the Secretary awards a rebate  
22       under the rebate program, the Secretary shall sub-  
23       mit to the Committee on Energy and Commerce of  
24       the House of Representatives and the Committee on  
25       Energy and Natural Resources of the Senate a re-

1 port of the number of rebates awarded for electric  
2 vehicle supply equipment and hydrogen fuel cell re-  
3 fueling equipment in each of the location categories  
4 described in paragraph (2)(C)(iii).

5 (c) DEFINITIONS.—In this section:

6 (1) COVERED EXPENSES.—The term “covered  
7 expenses” means an expense that is associated with  
8 the purchase and installation of electric vehicle sup-  
9 ply equipment, including—

10 (A) the cost of electric vehicle supply  
11 equipment;

12 (B) labor costs associated with the installa-  
13 tion of such electric vehicle supply equipment,  
14 only if wages for such labor are paid at rates  
15 not less than those prevailing on similar labor  
16 in the locality of installation, as determined by  
17 the Secretary of Labor under subchapter IV of  
18 chapter 31 of title 40, United States Code  
19 (commonly referred to as the “Davis-Bacon  
20 Act”);

21 (C) material costs associated with the in-  
22 stallation of such electric vehicle supply equip-  
23 ment, including expenses involving electrical  
24 equipment and necessary upgrades or modifica-  
25 tions to the electrical grid and associated infra-



1 structure required for the installation of such  
2 electric vehicle supply equipment;

3 (D) permit costs associated with the instal-  
4 lation of such electric vehicle supply equipment;  
5 and

6 (E) the cost of an on-site energy storage  
7 system.

8 (2) ELECTRIC VEHICLE.—The term “electric  
9 vehicle” means a vehicle that derives all or part of  
10 its power from electricity.

11 (3) MULTI-PORT CHARGER.—The term “multi-  
12 port charger” means electric vehicle supply equip-  
13 ment capable of charging more than one electric ve-  
14 hicle.

15 (4) LEVEL 2 CHARGING EQUIPMENT.—The  
16 term “level 2 charging equipment” means electric  
17 vehicle supply equipment that provides an alter-  
18 nating current power source at a minimum of 208  
19 volts.

20 (5) NETWORKED DIRECT CURRENT FAST  
21 CHARGING EQUIPMENT.—The term “networked di-  
22 rect current fast charging equipment” means electric  
23 vehicle supply equipment that provides a direct cur-  
24 rent power source at a minimum of 50 kilowatts and

1 is enabled to connect to a network to facilitate data  
2 collection and access.

3 (d) AUTHORIZATION OF APPROPRIATIONS.—There is  
4 authorized to be appropriated to carry out this section  
5 \$100,000,000 for each of fiscal years 2021 through 2025.

6 **SEC. 6503. EXPANDING ACCESS TO ELECTRIC VEHICLES IN**  
7 **UNDERSERVED COMMUNITIES.**

8 (a) ASSESSMENT.—

9 (1) IN GENERAL.—

10 (A) ASSESSMENT.—The Secretary shall  
11 conduct an assessment of the state of, chal-  
12 lenges to, and opportunities for the deployment  
13 of electric vehicle charging infrastructure in un-  
14 derserved or disadvantaged communities located  
15 in major urban areas and rural areas through-  
16 out the United States.

17 (B) REPORT.—Not later than 1 year after  
18 the date of the enactment of this Act, the Sec-  
19 retary shall submit to the Committee on Energy  
20 and Commerce of the House of Representatives  
21 and the Committee on Energy and Natural Re-  
22 sources of the Senate a report on the results of  
23 the assessment conducted under subparagraph  
24 (A), which shall—

1 (i) describe the state of deployment of  
2 electric vehicle charging infrastructure in  
3 underserved or disadvantaged communities  
4 located in major urban areas and rural  
5 areas by providing—

6 (I) the number of existing and  
7 planned Level 2 charging stations and  
8 DC FAST charging stations per cap-  
9 ita in each State for charging individ-  
10 ually owned light-duty and medium-  
11 duty electric vehicles;

12 (II) the number of existing and  
13 planned Level 2 charging stations and  
14 DC FAST charging stations for  
15 charging public and private fleet elec-  
16 tric vehicles and medium- and heavy-  
17 duty electric equipment and electric  
18 vehicles;

19 (III) the number of Level 2  
20 charging stations and DC FAST  
21 charging stations installed in or avail-  
22 able to occupants of publicly owned  
23 and privately owned multi-unit dwell-  
24 ings;

1 (IV) information pertaining to  
2 policies, plans, and programs that cit-  
3 ies, States, utilities, and private enti-  
4 ties are using to encourage greater de-  
5 ployment and usage of electric vehi-  
6 cles and the associated electric vehicle  
7 charging infrastructure, including pro-  
8 grams to encourage deployment of  
9 charging stations available to resi-  
10 dents in publicly owned and privately  
11 owned multi-unit dwellings;

12 (V) information pertaining to  
13 ownership models for Level 2 charging  
14 stations and DC FAST charging sta-  
15 tions located in publicly owned and  
16 privately owned residential multi-unit  
17 dwellings, commercial buildings, pub-  
18 lic and private parking areas, and  
19 curb-side locations; and

20 (VI) information pertaining to  
21 how charging stations are financed  
22 and the rates charged for the use of  
23 Level 2 charging stations and DC  
24 FAST charging stations;

1 (ii) describe the methodology used to  
2 obtain the information provided in the re-  
3 port;

4 (iii) identify the barriers to expanding  
5 deployment of electric vehicle charging in-  
6 frastructure in underserved or disadvan-  
7 tagged communities in major urban areas  
8 and rural areas, including any challenges  
9 relating to such deployment in multi-unit  
10 dwellings;

11 (iv) compile and provide an analysis of  
12 the best practices and policies used by  
13 State and local governments and private  
14 entities to increase deployment of electric  
15 vehicle charging infrastructure in under-  
16 served or disadvantaged communities in  
17 major urban areas and rural areas, includ-  
18 ing best practices with respect to—

19 (I) public outreach and engage-  
20 ment; and

21 (II) increasing deployment of  
22 electric vehicle charging infrastructure  
23 in publicly owned and privately owned  
24 multi-unit dwellings; and

1 (v) enumerate and identify the num-  
2 ber of electric vehicle charging stations per  
3 capita at locations within each major  
4 urban area and rural area throughout the  
5 United States with detail at the level of  
6 ZIP Codes and census tracts.

7 (2) FIVE-YEAR UPDATE ASSESSMENT.—Not  
8 later than 5 years after the date of the enactment  
9 of this Act, the Secretary shall—

10 (A) update the assessment conducted  
11 under paragraph (1)(A); and

12 (B) make public and submit to the Com-  
13 mittee on Energy and Commerce of the House  
14 of Representatives and the Committee on En-  
15 ergy and Natural Resources of the Senate a re-  
16 port, which shall—

17 (i) update the information required by  
18 paragraph (1)(B); and

19 (ii) include a description of case stud-  
20 ies and key lessons learned after the date  
21 on which the report under paragraph  
22 (1)(B) was submitted with respect to ex-  
23 panding the deployment of electric vehicle  
24 charging infrastructure in underserved or

1                   disadvantaged communities in major urban  
2                   areas and rural areas.

3       (b) DEFINITIONS.—In this section:

4           (1) ELECTRIC VEHICLE CHARGING INFRA-  
5       STRUCTURE.—The term “electric vehicle charging  
6       infrastructure” means electric vehicle supply equip-  
7       ment and other physical assets that provide for the  
8       distribution of and access to electricity for the pur-  
9       pose of charging an electric vehicle or a plug-in hy-  
10      brid electric vehicle.

11          (2) MAJOR URBAN AREA.—The term “major  
12      urban area” means a metropolitan statistical area  
13      within the United States with an estimated popu-  
14      lation that is greater than or equal to 1,500,000.

15 **SEC. 6504. ENSURING PROGRAM BENEFITS FOR UNDER-**  
16 **SERVED AND DISADVANTAGED COMMU-**  
17 **NITIES.**

18      In carrying out this subtitle, and the amendments  
19      made by this subtitle, the Secretary shall provide, to the  
20      extent practicable access to electric vehicle charging infra-  
21      structure, address transportation needs, and provide im-  
22      proved air quality in underserved or disadvantaged com-  
23      munities.

1 **SEC. 6505. MODEL BUILDING CODE FOR ELECTRIC VEHI-**  
2 **CLE SUPPLY EQUIPMENT.**

3 (a) REVIEW.—The Secretary shall review proposed or  
4 final model building codes for—

5 (1) integrating electric vehicle supply equipment  
6 into residential and commercial buildings that in-  
7 clude space for individual vehicle or fleet vehicle  
8 parking; and

9 (2) integrating onsite renewable power equip-  
10 ment and electric storage equipment (including elec-  
11 tric vehicle batteries to be used for electric storage)  
12 into residential and commercial buildings.

13 (b) TECHNICAL ASSISTANCE.—The Secretary shall  
14 provide technical assistance to stakeholders representing  
15 the building construction industry, manufacturers of elec-  
16 tric vehicles and electric vehicle supply equipment, State  
17 and local governments, and any other persons with rel-  
18 evant expertise or interests to facilitate understanding of  
19 the model code and best practices for adoption by jurisdic-  
20 tions.

21 **SEC. 6506. ELECTRIC VEHICLE SUPPLY EQUIPMENT CO-**  
22 **ORDINATION.**

23 (a) IN GENERAL.—Not later than 90 days after the  
24 date of enactment of this Act, the Secretary, acting  
25 through the Assistant Secretary of the Office of Electricity  
26 Delivery and Energy Reliability (including the Smart Grid



1 Task Force), shall convene a group to assess progress in  
2 the development of standards necessary to—

3 (1) support the expanded deployment of electric  
4 vehicle supply equipment;

5 (2) develop an electric vehicle charging network  
6 to provide reliable charging for electric vehicles na-  
7 tionwide; and

8 (3) ensure the development of such network will  
9 not compromise the stability and reliability of the  
10 electric grid.

11 (b) REPORT TO CONGRESS.—Not later than 1 year  
12 after the date of enactment of this Act, the Secretary shall  
13 provide to the Committee on Energy and Commerce of the  
14 House of Representatives and to the Committee on En-  
15 ergy and Natural Resources of the Senate a report con-  
16 taining the results of the assessment carried out under  
17 subsection (a) and recommendations to overcome any bar-  
18 riers to standards development or adoption identified by  
19 the group convened under such subsection.

20 **SEC. 6507. STATE CONSIDERATION OF ELECTRIC VEHICLE**  
21 **CHARGING.**

22 (a) CONSIDERATION AND DETERMINATION RESPECT-  
23 ING CERTAIN RATEMAKING STANDARDS.—Section 111(d)  
24 of the Public Utility Regulatory Policies Act of 1978 (16

1 U.S.C. 2621(d)) is amended by adding at the end the fol-  
2 lowing:

3 “(21) ELECTRIC VEHICLE CHARGING PRO-  
4 GRAMS.—

5 “(A) IN GENERAL.—Each State shall con-  
6 sider measures to promote greater electrifica-  
7 tion of the transportation sector, including—

8 “(i) authorizing measures to stimulate  
9 investment in and deployment of electric  
10 vehicle supply equipment and to foster the  
11 market for electric vehicle charging;

12 “(ii) authorizing each electric utility  
13 of the State to recover from ratepayers any  
14 capital, operating expenditure, or other  
15 costs of the electric utility relating to load  
16 management, programs, or investments as-  
17 sociated with the integration of electric ve-  
18 hicle supply equipment into the grid; and

19 “(iii) allowing a person or agency that  
20 owns and operates an electric vehicle  
21 charging facility for the sole purpose of re-  
22 charging an electric vehicle battery to be  
23 excluded from regulation as an electric  
24 utility pursuant to section 3(4) when mak-  
25 ing electricity sales from the use of the

1 electric vehicle charging facility, if such  
2 sales are the only sales of electricity made  
3 by the person or agency.

4 “(B) DEFINITION.—For purposes of this  
5 paragraph, the term ‘electric vehicle supply  
6 equipment’ means conductors, including  
7 ungrounded, grounded, and equipment ground-  
8 ing conductors, electric vehicle connectors, at-  
9 tachment plugs, and all other fittings, devices,  
10 power outlets, or apparatuses installed specifi-  
11 cally for the purpose of delivering energy to an  
12 electric vehicle.”.

13 (b) OBLIGATIONS TO CONSIDER AND DETERMINE.—

14 (1) TIME LIMITATIONS.—Section 112(b) of the  
15 Public Utility Regulatory Policies Act of 1978 (16  
16 U.S.C. 2622(b)) is amended by adding at the end  
17 the following:

18 “(8)(A) Not later than 1 year after the date of  
19 enactment of this paragraph, each State regulatory  
20 authority (with respect to each electric utility for  
21 which it has ratemaking authority) and each non-  
22 regulated electric utility shall commence the consid-  
23 eration referred to in section 111, or set a hearing  
24 date for consideration, with respect to the standards  
25 established by paragraph (21) of section 111(d).

1           “(B) Not later than 2 years after the date of  
2           the enactment of this paragraph, each State regu-  
3           latory authority (with respect to each electric utility  
4           for which it has ratemaking authority), and each  
5           nonregulated electric utility, shall complete the con-  
6           sideration, and shall make the determination, re-  
7           ferred to in section 111 with respect to each stand-  
8           ard established by paragraph (21) of section  
9           111(d).”.

10           (2) FAILURE TO COMPLY.—Section 112(c) of  
11           the Public Utility Regulatory Policies Act of 1978  
12           (16 U.S.C. 2622(c)) is amended by adding at the  
13           end the following: “In the case of the standard es-  
14           tablished by paragraph (21) of section 111(d), the  
15           reference contained in this subsection to the date of  
16           enactment of this Act shall be deemed to be a ref-  
17           erence to the date of enactment of that paragraph.”.

18           (3) PRIOR STATE ACTIONS.—Section 112 of the  
19           Public Utility Regulatory Policies Act of 1978 (16  
20           U.S.C. 2622) is amended by adding at the end the  
21           following:

22           “(h) PRIOR STATE ACTIONS.—Subsections (b) and  
23           (c) of this section shall not apply to the standard estab-  
24           lished by paragraph (21) of section 111(d) in the case of

1 any electric utility in a State if, before the enactment of  
2 this subsection—

3 “(1) the State has implemented for such utility  
4 the standard concerned (or a comparable standard);

5 “(2) the State regulatory authority for such  
6 State or relevant nonregulated electric utility has  
7 conducted a proceeding to consider implementation  
8 of the standard concerned (or a comparable stand-  
9 ard) for such utility;

10 “(3) the State legislature has voted on the im-  
11 plementation of such standard (or a comparable  
12 standard) for such utility; or

13 “(4) the State has taken action to implement  
14 incentives or other steps to strongly encourage the  
15 deployment of electric vehicles.”.

16 (4) PRIOR AND PENDING PROCEEDINGS.—Sec-  
17 tion 124 of the Public Utility Regulatory Policies  
18 Act of 1978 (16 U.S.C. 2634) is amended is amend-  
19 ed by adding at the end the following: “In the case  
20 of the standard established by paragraph (21) of  
21 section 111(d), the reference contained in this sec-  
22 tion to the date of the enactment of this Act shall  
23 be deemed to be a reference to the date of enact-  
24 ment of such paragraph (21).”.

1 **SEC. 6508. STATE ENERGY PLANS.**

2 (a) STATE ENERGY CONSERVATION PLANS.—Section  
3 362(d) of the Energy Policy and Conservation Act (42  
4 U.S.C. 6322(d)) is amended—

5 (1) in paragraph (16), by striking “; and” and  
6 inserting a semicolon;

7 (2) by redesignating paragraph (17) as para-  
8 graph (18); and

9 (3) by inserting after paragraph (16) the fol-  
10 lowing:

11 “(17) a State energy transportation plan devel-  
12 oped in accordance with section 368; and”.

13 (b) AUTHORIZATION OF APPROPRIATIONS.—Section  
14 365(f) of the Energy Policy and Conservation Act (42  
15 U.S.C. 6325(f)) is amended to read as follows:

16 “(f) AUTHORIZATION OF APPROPRIATIONS.—

17 “(1) STATE ENERGY CONSERVATION PLANS.—  
18 For the purpose of carrying out this part, there are  
19 authorized to be appropriated \$100,000,000 for each  
20 of fiscal years 2021 through 2025.

21 “(2) STATE ENERGY TRANSPORTATION  
22 PLANS.—In addition to the amounts authorized  
23 under paragraph (1), for the purpose of carrying out  
24 section 368, there are authorized to be appropriated  
25 \$25,000,000 for each of fiscal years 2021 through  
26 2025.”.

1 (c) STATE ENERGY TRANSPORTATION PLANS.—

2 (1) IN GENERAL.—Part D of title III of the  
3 Energy Policy and Conservation Act (42 U.S.C.  
4 6321 et seq.) is further amended by adding at the  
5 end the following:

6 **“SEC. 368. STATE ENERGY TRANSPORTATION PLANS.**

7 “(a) IN GENERAL.—The Secretary may provide fi-  
8 nancial assistance to a State to develop a State energy  
9 transportation plan, for inclusion in a State energy con-  
10 servation plan under section 362(d), to promote the elec-  
11 trification of the transportation system, reduced consump-  
12 tion of fossil fuels, and improved air quality.

13 “(b) DEVELOPMENT.—A State developing a State en-  
14 ergy transportation plan under this section shall carry out  
15 this activity through the State energy office that is respon-  
16 sible for developing the State energy conservation plan  
17 under section 362.

18 “(c) CONTENTS.—A State developing a State energy  
19 transportation plan under this section shall include in such  
20 plan a plan to—

21 “(1) deploy a network of electric vehicle supply  
22 equipment to ensure access to electricity for electric  
23 vehicles, including commercial vehicles; and

24 “(2) promote modernization of the electric grid  
25 to accommodate demand for power to operate elec-

1       tric vehicle supply equipment and to utilize energy  
2       storage capacity provided by electric vehicles, includ-  
3       ing commercial vehicles.

4       “(d) COORDINATION.—In developing a State energy  
5       transportation plan under this section, a State shall co-  
6       ordinate, as appropriate, with—

7               “(1) State regulatory authorities (as defined in  
8       section 3 of the Public Utility Regulatory Policies  
9       Act of 1978 (16 U.S.C. 2602));

10              “(2) electric utilities;

11              “(3) regional transmission organizations or  
12       independent system operators;

13              “(4) private entities that provide electric vehicle  
14       charging services;

15              “(5) State transportation agencies, metropoli-  
16       tan planning organizations, and local governments;

17              “(6) electric vehicle manufacturers;

18              “(7) public and private entities that manage ve-  
19       hicle fleets; and

20              “(8) public and private entities that manage  
21       ports, airports, or other transportation hubs.

22       “(e) TECHNICAL ASSISTANCE.—Upon request of the  
23       Governor of a State, the Secretary shall provide informa-  
24       tion and technical assistance in the development, imple-



1 mentation, or revision of a State energy transportation  
2 plan.

3 “(f) ELECTRIC VEHICLE SUPPLY EQUIPMENT DE-  
4 FINED.—For purposes of this section, the term ‘electric  
5 vehicle supply equipment’ means conductors, including  
6 ungrounded, grounded, and equipment grounding conduc-  
7 tors, electric vehicle connectors, attachment plugs, and all  
8 other fittings, devices, power outlets, or apparatuses in-  
9 stalled specifically for the purpose of delivering energy to  
10 an electric vehicle.”.

11 (2) CONFORMING AMENDMENT.—The table of  
12 sections for part D of title III of the Energy Policy  
13 and Conservation Act is further amended by adding  
14 at the end the following:

“Sec. 368. State energy security plans.”.

15 **SEC. 6509. TRANSPORTATION ELECTRIFICATION.**

16 Section 131 of the Energy Independence and Security  
17 Act of 2007 (42 U.S.C. 17011) is amended—

18 (1) in subsection (a)(6)—

19 (A) in subparagraph (A), by inserting “,  
20 including ground support equipment at ports”  
21 before the semicolon;

22 (B) in subparagraph (E), by inserting  
23 “and vehicles” before the semicolon;

24 (C) in subparagraph (H), by striking  
25 “and” at the end;

1 (D) in subparagraph (I)—

2 (i) by striking “battery chargers,”;

3 and

4 (ii) by striking the period at the end

5 and inserting a semicolon; and

6 (E) by adding at the end the following:

7 “(J) installation of electric vehicle supply  
8 equipment for recharging plug-in electric drive  
9 vehicles, including such equipment that is acces-  
10 sible in rural and urban areas and in under-  
11 served or disadvantaged communities and such  
12 equipment for medium- and heavy-duty vehicles,  
13 including at depots and in-route locations;

14 “(K) multi-use charging hubs used for  
15 multiple forms of transportation;

16 “(L) medium- and heavy-duty vehicle  
17 smart charging management and refueling;

18 “(M) battery recycling and secondary use,  
19 including for medium- and heavy-duty vehicles;  
20 and

21 “(N) sharing of best practices, and tech-  
22 nical assistance provided by the Department to  
23 public utilities commissions and utilities, for  
24 medium- and heavy-duty vehicle electrifica-  
25 tion.”;

1 (2) in subsection (b)—

2 (A) in paragraph (3)(A)—

3 (i) in clause (i), by striking “and” at  
4 the end; and

5 (ii) in clause (ii), by inserting “, com-  
6 ponents for such vehicles, and charging  
7 equipment for such vehicles” after “vehi-  
8 cles”; and

9 (B) in paragraph (6), by striking  
10 “\$90,000,000 for each of fiscal years 2008  
11 through 2012” and inserting “\$2,000,000,000  
12 for each of fiscal years 2021 through 2025”;

13 (3) in subsection (c)—

14 (A) in the header, by striking “NEAR-  
15 TERM” and inserting “LARGE-SCALE”; and

16 (B) in paragraph (4), by striking  
17 “\$95,000,000 for each of fiscal years 2008  
18 through 2013” and inserting “\$2,500,000,000  
19 for each of fiscal years 2021 through 2025”;  
20 and

21 (4) by redesignating subsection (d) as sub-  
22 section (e) and inserting after subsection (c) the fol-  
23 lowing:

24 “(d) PRIORITY.—In providing grants under sub-  
25 sections (b) and (c), the Secretary shall give priority con-

1 sideration to applications that contain a written assurance  
2 that all laborers and mechanics employed by contractors  
3 or subcontractors during construction, alteration, or re-  
4 pair that is financed, in whole or in part, by a grant pro-  
5 vided under this section shall be paid wages at rates not  
6 less than those prevailing on similar construction in the  
7 locality, as determined by the Secretary of Labor in ac-  
8 cordance with sections 3141 through 3144, 3146, and  
9 3147 of title 40, United States Code (and the Secretary  
10 of Labor shall, with respect to the labor standards de-  
11 scribed in this clause, have the authority and functions  
12 set forth in Reorganization Plan Numbered 14 of 1950  
13 (5 U.S.C. App.) and section 3145 of title 40, United  
14 States Code).”.

15 **SEC. 6510. FEDERAL FLEETS.**

16 (a) MINIMUM FEDERAL FLEET REQUIREMENT.—  
17 Section 303 of the Energy Policy Act of 1992 (42 U.S.C.  
18 13212) is amended—

19 (1) in subsection (a), by adding at the end the  
20 following:

21 “(3) The Secretary, in consultation with the Adminis-  
22 trator of General Services, shall ensure that in acquiring  
23 medium- and heavy-duty vehicles for a Federal fleet, a  
24 Federal entity shall acquire zero emission vehicles to the  
25 maximum extent feasible.”;

1 (2) by striking subsection (b) and inserting the  
2 following:

3 “(b) PERCENTAGE REQUIREMENTS.—

4 “(1) IN GENERAL.—

5 “(A) LIGHT-DUTY VEHICLES.—Beginning  
6 in fiscal year 2025, 100 percent of the total  
7 number of light-duty vehicles acquired by a  
8 Federal entity for a Federal fleet shall be alter-  
9 native fueled vehicles, of which—

10 “(i) at least 50 percent shall be zero  
11 emission vehicles or plug-in hybrids in fis-  
12 cal years 2025 through 2034;

13 “(ii) at least 75 percent shall be zero  
14 emission vehicles or plug-in hybrids in fis-  
15 cal years 2035 through 2049; and

16 “(iii) 100 percent shall be zero emis-  
17 sion vehicles in fiscal year 2050 and there-  
18 after.

19 “(B) MEDIUM- AND HEAVY-DUTY VEHI-  
20 CLES.—The following percentages of the total  
21 number of medium- and heavy-duty vehicles ac-  
22 quired by a Federal entity for a Federal fleet  
23 shall be alternative fueled vehicles:

24 “(i) At least 20 percent in fiscal years  
25 2025 through 2029.

1                   “(ii) At least 30 percent in fiscal  
2                   years 2030 through 2039.

3                   “(iii) At least 40 percent in fiscal  
4                   years 2040 through 2049.

5                   “(iv) At least 50 percent in fiscal year  
6                   2050 and thereafter.

7                   “(2) EXCEPTION.—The Secretary, in consulta-  
8                   tion with the Administrator of General Services  
9                   where appropriate, may permit a Federal entity to  
10                  acquire for a Federal fleet a smaller percentage than  
11                  is required in paragraph (1) for a fiscal year, so long  
12                  as the aggregate percentage acquired for each class  
13                  of vehicle for all Federal fleets in the fiscal year is  
14                  at least equal to the required percentage.

15                  “(3) DEFINITIONS.—In this subsection:

16                  “(A) FEDERAL FLEET.—The term ‘Fed-  
17                  eral fleet’ means a fleet of vehicles that are cen-  
18                  trally fueled or capable of being centrally fueled  
19                  and are owned, operated, leased, or otherwise  
20                  controlled by or assigned to any Federal execu-  
21                  tive department, military department, Govern-  
22                  ment corporation, independent establishment,  
23                  or executive agency, the United States Postal  
24                  Service, the Congress, the courts of the United

1 States, or the Executive Office of the President.

2 Such term does not include—

3 “(i) motor vehicles held for lease or  
4 rental to the general public;

5 “(ii) motor vehicles used for motor ve-  
6 hicle manufacturer product evaluations or  
7 tests;

8 “(iii) law enforcement vehicles;

9 “(iv) emergency vehicles; or

10 “(v) motor vehicles acquired and used  
11 for military purposes that the Secretary of  
12 Defense has certified to the Secretary must  
13 be exempt for national security reasons.

14 “(B) FLEET.—The term ‘fleet’ means—

15 “(i) 20 or more light-duty vehicles, lo-  
16 cated in a metropolitan statistical area or  
17 consolidated metropolitan statistical area,  
18 as established by the Bureau of the Cen-  
19 sus, with a 1980 population of more than  
20 250,000; or

21 “(ii) 10 or more medium- or heavy-  
22 duty vehicles, located at a Federal facility  
23 or located in a metropolitan statistical area  
24 or consolidated metropolitan statistical  
25 area, as established by the Bureau of the

1 Census, with a 1980 population of more  
2 than 250,000.”; and

3 (3) in subsection (f)(2)(B)—

4 (A) by striking “, either”; and

5 (B) in clause (i), by striking “or” and in-  
6 serting “and”.

7 (b) FEDERAL FLEET CONSERVATION REQUIRE-  
8 MENTS.—Section 400FF(a) of the Energy Policy and  
9 Conservation Act (42 U.S.C. 6374e) is amended—

10 (1) in paragraph (1)—

11 (A) by striking “18 months after the date  
12 of enactment of this section” and inserting “12  
13 months after the date of enactment of the  
14 Clean Economy Jobs and Innovation Act”;

15 (B) by striking “2010” and inserting  
16 “2022”; and

17 (C) by striking “and increase alternative  
18 fuel consumption” and inserting “, increase al-  
19 ternative fuel consumption, and reduce vehicle  
20 greenhouse gas emissions”; and

21 (2) by striking paragraph (2) and inserting the  
22 following:

23 “(2) GOALS.—The goals of the requirements  
24 under paragraph (1) are that each Federal agency  
25 shall—



1           “(A) reduce fleet-wide per-mile greenhouse  
2           gas emissions from agency fleet vehicles, rel-  
3           ative to a baseline of emissions in 2015, by—

4                   “(i) not less than 30 percent by the  
5                   end of fiscal year 2025;

6                   “(ii) not less than 50 percent by the  
7                   end of fiscal year 2030; and

8                   “(iii) 100 percent by the end of fiscal  
9                   year 2050; and

10           “(B) increase the annual percentage of al-  
11           ternative fuel consumption by agency fleet vehi-  
12           cles as a proportion of total annual fuel con-  
13           sumption by Federal fleet vehicles, to achieve—

14                   “(i) 25 percent of total annual fuel  
15                   consumption that is alternative fuel by the  
16                   end of fiscal year 2025;

17                   “(ii) 50 percent of total annual fuel  
18                   consumption that is alternative fuel by the  
19                   end of fiscal year 2035; and

20                   “(iii) at least 85 percent of total an-  
21                   nual fuel consumption that is alternative  
22                   fuel by the end of fiscal year 2050.”.

1 **SEC. 6511. DOMESTIC MANUFACTURING CONVERSION**  
2 **GRANT PROGRAM.**

3 (a) HYBRID VEHICLES, ADVANCED VEHICLES, AND  
4 FUEL CELL BUSES.—Subtitle B of title VII of the Energy  
5 Policy Act of 2005 (42 U.S.C. 16061 et seq.) is amend-  
6 ed—

7 (1) in the subtitle header, by inserting “**Plug-**  
8 **In Electric Vehicles,**” before “**Hybrid Vehi-**  
9 **cles**”; and

10 (2) in part 1, in the part header, by striking  
11 “**HYBRID**” and inserting “**PLUG-IN ELECTRIC**”.

12 (b) PLUG-IN ELECTRIC VEHICLES.—Section 711 of  
13 the Energy Policy Act of 2005 (42 U.S.C. 16061) is  
14 amended to read as follows:

15 **“SEC. 711. PLUG-IN ELECTRIC VEHICLES.**

16 “The Secretary shall accelerate efforts, related to do-  
17 mestic manufacturing, that are directed toward the im-  
18 provement of batteries, power electronics, and other tech-  
19 nologies for use in plug-in electric vehicles.”.

20 (c) EFFICIENT HYBRID AND ADVANCED DIESEL VE-  
21 HICLES.—Section 712 of the Energy Policy Act of 2005  
22 (42 U.S.C. 16062) is amended—

23 (1) in subsection (a)—

24 (A) in paragraph (1), by inserting “, plug-  
25 in electric,” after “efficient hybrid”; and

1 (B) by amending paragraph (3) to read as  
2 follows:

3 “(3) PRIORITY.—Priority shall be given to—

4 “(A) the refurbishment or retooling of  
5 manufacturing facilities that have recently  
6 ceased operation or would otherwise cease oper-  
7 ation in the near future; and

8 “(B) applications containing a written as-  
9 surance that—

10 “(i) all laborers and mechanics em-  
11 ployed by contractors or subcontractors  
12 during construction, alteration, retooling,  
13 or repair that is financed, in whole or in  
14 part, by a grant under this subsection shall  
15 be paid wages at rates not less than those  
16 prevailing on similar construction in the lo-  
17 cality, as determined by the Secretary of  
18 Labor in accordance with sections 3141  
19 through 3144, 3146, and 3147 of title 40,  
20 United States Code;

21 “(ii) all laborers and mechanics em-  
22 ployed by the owner or operator of a man-  
23 ufacturing facility that is financed, in  
24 whole or in part, by a grant under this  
25 subsection shall be paid wages at rates not

1 less than those prevailing on similar con-  
2 struction in the locality, as determined by  
3 the Secretary of Labor in accordance with  
4 sections 3141 through 3144, 3146, and  
5 3147 of title 40, United States Code; and

6 “(iii) the Secretary of Labor shall,  
7 with respect to the labor standards de-  
8 scribed in this paragraph, have the author-  
9 ity and functions set forth in Reorganiza-  
10 tion Plan Numbered 14 of 1950 (5 U.S.C.  
11 App.) and section 3145 of title 40, United  
12 States Code.”; and

13 (2) by striking subsection (c) and inserting the  
14 following:

15 “(c) COST SHARE AND GUARANTEE OF OPER-  
16 ATION.—

17 “(1) CONDITION.—A recipient of a grant under  
18 this section shall pay the Secretary the full amount  
19 of the grant if the facility financed in whole or in  
20 part under this subsection fails to manufacture  
21 goods for a period of at least 10 years after the com-  
22 pletion of construction.

23 “(2) COST SHARE.—Section 988(c) shall apply  
24 to a grant made under this subsection.

1 “(d) AUTHORIZATION OF APPROPRIATIONS.—There  
2 is authorized to be appropriated to the Secretary to carry  
3 out this section \$2.5 billion for each of fiscal years 2021  
4 through 2025.

5 “(e) PERIOD OF AVAILABILITY.—An award made  
6 under this section after the date of enactment of this sub-  
7 section shall only be available with respect to facilities and  
8 equipment placed in service before December 30, 2035.”.

9 (d) CONFORMING AMENDMENT.—The table of con-  
10 tents of the Energy Policy Act of 2005 is amended—

11 (1) in the item relating to subtitle B of title  
12 VII, by inserting “Plug-In Electric Vehicles,” before  
13 “Hybrid Vehicles”;

14 (2) in the item relating to part 1 of such sub-  
15 title, by striking “Hybrid” and inserting “Plug-In  
16 Electric”; and

17 (3) in the item relating to section 711, by strik-  
18 ing “Hybrid” and inserting “Plug-in electric”.

19 **SEC. 6512. ADVANCED TECHNOLOGY VEHICLES MANUFAC-**  
20 **TURING INCENTIVE PROGRAM.**

21 Section 136 of the Energy Independence and Security  
22 Act of 2007 (42 U.S.C. 17013) is amended—

23 (1) in subsection (a)—

24 (A) in paragraph (1)—

1 (i) by redesignating subparagraphs  
2 (A) through (C) as clauses (i) through  
3 (iii), respectively, and indenting appro-  
4 priately;

5 (ii) by striking “(1) ADVANCED TECH-  
6 NOLOGY VEHICLE.—” and all that follows  
7 through “meets—” and inserting the fol-  
8 lowing:

9 “(1) ADVANCED TECHNOLOGY VEHICLE.—The  
10 term ‘advanced technology vehicle’ means—

11 “(A) an ultra efficient vehicle;

12 “(B) a light-duty vehicle or medium-duty  
13 passenger vehicle that—”;

14 (iii) in subparagraph (B)(i) (as so re-  
15 designated), by striking “the Bin 5 Tier  
16 II” and inserting “meets the Bin 160 Tier  
17 III”;

18 (iv) in subparagraph (B)(ii) (as so re-  
19 designated), by inserting “meets” before  
20 “any new”;

21 (v) by amending subparagraph (B)(iii)  
22 (as so redesignated) to read as follows:

23 “(iii)(I) for vehicles produced in model  
24 years 2021 through 2025, meets the appli-  
25 cable regulatory standards for emissions of

1 greenhouse gases for model year 2021  
2 through 2025 vehicles promulgated by the  
3 Administrator of the Environmental Pro-  
4 tection Agency on October 15, 2012 (77  
5 Fed. Reg. 62624); or

6 “(II) emits zero emissions of green-  
7 house gases; or”; and

8 (vi) by adding at the end the fol-  
9 lowing:

10 “(C) a heavy-duty vehicle (excluding a me-  
11 dium-duty passenger vehicle) that—

12 “(i) complies early with and dem-  
13 onstrates achievement below the applicable  
14 regulatory standards for emissions of  
15 greenhouse gases for model year 2027 ve-  
16 hicles promulgated by the Administrator  
17 on October 25, 2016 (81 Fed. Reg.  
18 73478); or

19 “(ii) emits zero emissions of green-  
20 house gases.”;

21 (B) by striking paragraph (2) and redesign-  
22 ating paragraph (3) as paragraph (2);

23 (C) by striking paragraph (4) and insert-  
24 ing the following:

1           “(3) QUALIFYING COMPONENT.—The term  
2           ‘qualifying component’ means a material, technology,  
3           component, system, or subsystem in an advanced  
4           technology vehicle, including an ultra-efficient com-  
5           ponent.

6           “(4) ULTRA-EFFICIENT COMPONENT.—The  
7           term ‘ultra-efficient component’ means a component  
8           of an ultra efficient vehicle, including—

9                   “(A) fuel cell technology;

10                   “(B) battery technology, including a bat-  
11                   tery cell, battery, battery management system,  
12                   or thermal control system;

13                   “(C) an automotive semiconductor or com-  
14                   puter;

15                   “(D) an electric motor, axle, or component;  
16                   and

17                   “(E) an advanced lightweight, high-  
18                   strength, or high-performance material.”; and

19                   (D) in paragraph (5)—

20                           (i) in subparagraph (B), by striking  
21                           “or” at the end;

22                           (ii) in subparagraph (C), by striking  
23                           the period at the end and inserting “; or”;  
24                           and



1 (iii) by adding at the end the fol-  
2 lowing:

3 “(D) at least 75 miles per gallon equiva-  
4 lent while operating as a hydrogen fuel cell elec-  
5 tric vehicle.”;

6 (2) by amending subsection (b) to read as fol-  
7 lows:

8 “(b) ADVANCED VEHICLES MANUFACTURING FACIL-  
9 ITY.—

10 “(1) IN GENERAL.—The Secretary shall provide  
11 facility funding awards under this section to ad-  
12 vanced technology vehicle manufacturers and compo-  
13 nent suppliers to pay not more than 50 percent of  
14 the cost of—

15 “(A) reequipping, expanding, or estab-  
16 lishing a manufacturing facility in the United  
17 States to produce—

18 “(i) advanced technology vehicles; or

19 “(ii) qualifying components; and

20 “(B) engineering integration performed in  
21 the United States of advanced technology vehi-  
22 cles and qualifying components.

23 “(2) ULTRA-EFFICIENT COMPONENTS COST  
24 SHARE.—Notwithstanding paragraph (1), a facility  
25 funding award under such paragraph may pay not

1 more than 80 percent of the cost of a project to  
2 reequip, expand, or establish a manufacturing facil-  
3 ity in the United States to produce ultra-efficient  
4 components.”;

5 (3) in subsection (c), by striking “2020” and  
6 inserting “2030” each place it appears;

7 (4) in subsection (d)—

8 (A) by amending paragraph (2) to read as  
9 follows:

10 “(2) APPLICATION.—An applicant for a loan  
11 under this subsection shall submit to the Secretary  
12 an application at such time, in such manner, and  
13 containing such information as the Secretary may  
14 require, including—

15 “(A) a written assurance that—

16 “(i) all laborers and mechanics em-  
17 ployed by contractors or subcontractors  
18 during construction, alteration, or repair,  
19 or at any manufacturing operation, that is  
20 financed, in whole or in part, by a loan  
21 under this section shall be paid wages at  
22 rates not less than those prevailing in a  
23 similar firm or on similar construction in  
24 the locality, as determined by the Sec-  
25 retary of Labor in accordance with sub-

1 chapter IV of chapter 31 of title 40,  
2 United States Code; and

3 “(ii) the Secretary of Labor shall,  
4 with respect to the labor standards de-  
5 scribed in this paragraph, have the author-  
6 ity and functions set forth in Reorganiza-  
7 tion Plan Numbered 14 of 1950 (64 Stat.  
8 1267; 5 U.S.C. App.) and section 3145 of  
9 title 40, United States Code;

10 “(B) a disclosure of whether there has  
11 been any administrative merits determination,  
12 arbitral award or decision, or civil judgment, as  
13 defined in guidance issued by the Secretary of  
14 Labor, rendered against the applicant in the  
15 preceding 3 years for violations of applicable  
16 labor, employment, civil rights, or health and  
17 safety laws;

18 “(C) specific information regarding the ac-  
19 tions the applicant will take to demonstrate  
20 compliance with, and where possible exceedance  
21 of, requirements under applicable labor, employ-  
22 ment, civil rights, and health and safety laws,  
23 and actions the applicant will take to ensure  
24 that its direct suppliers demonstrate compliance

1 with applicable labor, employment, civil rights,  
2 and health and safety laws; and

3 “(D) an estimate and description of the  
4 jobs and types of jobs to be retained or created  
5 by the project and the specific actions the appli-  
6 cant will take to increase employment and re-  
7 tention of dislocated workers, veterans, individ-  
8 uals from low-income communities, women, mi-  
9 norities, and other groups underrepresented in  
10 manufacturing, and individuals with a barrier  
11 to employment.”;

12 (B) by amending paragraph (3) to read as  
13 follows:

14 “(3) SELECTION OF ELIGIBLE PROJECTS.—The  
15 Secretary shall select eligible projects to receive  
16 loans under this subsection in cases in which the  
17 Secretary determines—

18 “(A) the loan recipient—

19 “(i) has a reasonable prospect of re-  
20 paying the principal and interest on the  
21 loan;

22 “(ii) will provide sufficient informa-  
23 tion to the Secretary for the Secretary to  
24 ensure that the qualified investment is ex-  
25 pended efficiently and effectively; and

1 “(ii) has met such other criteria as  
2 may be established and published by the  
3 Secretary; and

4 “(B) the amount of the loan (when com-  
5 bined with amounts available to the loan recipi-  
6 ent from other sources) will be sufficient to  
7 carry out the project.”; and

8 (C) in paragraph (4)—

9 (i) in subparagraph (B)(i), by striking  
10 “; and” and inserting “; or”;

11 (ii) in subparagraph (C), by striking  
12 “; and” and inserting a semicolon;

13 (iii) in subparagraph (D), by striking  
14 the period at the end and inserting “;  
15 and”; and

16 (iv) by adding at the end the fol-  
17 lowing:

18 “(E) shall be subject to the condition that  
19 the loan is not subordinate to other financing.”;

20 (5) by amending subsection (e) to read as fol-  
21 lows:

22 “(e) REGULATIONS.—Not later than 6 months after  
23 the date of enactment of the Clean Economy Jobs and  
24 Innovation Act, the Secretary shall issue a final rule estab-  
25 lishing regulations to carry out this section.”;

1           (6) by amending subsection (f) to read as fol-  
2       lows:

3       “(f) FEES.—The Secretary shall charge and collect  
4       fees for loans under this section in amounts the Secretary  
5       determines are sufficient to cover applicable administra-  
6       tive expenses (including any costs associated with third-  
7       party consultants engaged by the Secretary), which may  
8       not exceed \$100,000 or 10 basis points of the loan and  
9       may not be collected prior to financial closing.”;

10          (7) by amending subsection (g) to read as fol-  
11       lows:

12       “(g) PRIORITY.—The Secretary shall, in making  
13       awards or loans to those manufacturers that have existing  
14       facilities (which may be idle), give priority to those facili-  
15       ties that are or would be—

16           “(1) oldest or in existence for at least 20 years;

17           “(2) recently closed, or at risk of closure;

18           “(3) utilized primarily for the manufacture of  
19       medium-duty passenger vehicles or other heavy-duty  
20       vehicles that emit zero greenhouse gas emissions; or

21           “(4) utilized primarily for the manufacture of  
22       ultra-efficient components.”;

23          (8) in subsection (h)—

1 (A) in the header, by striking “AUTO-  
2 MOBILE” and inserting “ADVANCED TECH-  
3 NOLOGY VEHICLE”; and

4 (B) in paragraph (1)(B), by striking  
5 “automobiles, or components of automobiles”  
6 and inserting “advanced technology vehicles, or  
7 components of advanced technology vehicles”;

8 (9) by striking subsection (i) and redesignating  
9 subsection (j) as subsection (i); and

10 (10) by adding at the end the following:

11 “(j) COORDINATION.—In carrying out this section,  
12 the Secretary shall coordinate with relevant vehicle, bio-  
13 energy, and hydrogen and fuel cell demonstration project  
14 activities supported by the Department.

15 “(k) OUTREACH.—In carrying out this section, the  
16 Secretary shall—

17 “(1) provide assistance with the completion of  
18 applications for awards or loans under this section;  
19 and

20 “(2) conduct outreach, including through con-  
21 ferences and online programs, to disseminate infor-  
22 mation on awards and loans under this section to  
23 potential applicants.

24 “(l) REPORT.—Not later than 2 years after the date  
25 of the enactment of this subsection, and every 3 years

1 thereafter, the Secretary shall submit to Congress a report  
2 on the status of projects supported by a loan under this  
3 section, including—

4 “(1) a list of projects receiving a loan under  
5 this section, including the loan amount and con-  
6 struction status of each such project;

7 “(2) the status of each project’s loan repay-  
8 ment, including future repayment projections;

9 “(3) data regarding the number of direct and  
10 indirect jobs retained, restored, or created by fi-  
11 nanced projects;

12 “(4) the number of new projects projected to  
13 receive a loan under this section in the next 2 years  
14 and the aggregate loan amount; and

15 “(5) any other metrics the Secretary finds ap-  
16 propriate.

17 “(m) AUTHORIZATION OF APPROPRIATIONS.—There  
18 are authorized to be appropriated to carry out this sec-  
19 tion—

20 “(1) \$10,000,000 for each of fiscal years 2021  
21 through 2025 to administer this section; and

22 “(2) \$10,000,000 for fiscal year 2021, to re-  
23 main available until expended, for administrative  
24 costs associated with loans under this section that



1 are not covered by fees collected under subsection  
2 (f).”.

3 **Subtitle F—Vehicles Used for**  
4 **Competition**

5 **SEC. 6601. TREATMENT OF VEHICLES NOT REGISTERED**  
6 **AND USED SOLELY FOR COMPETITION.**

7 (a) TREATMENT.—An action with respect to any de-  
8 vice or element of design referred to in paragraph (3) of  
9 section 203(a) of the Clean Air Act (42 U.S.C. 7522(a))  
10 shall not be treated as a prohibited act under such para-  
11 graph if the action is for the purpose of modifying a motor  
12 vehicle that is not registered to be operated on a street  
13 or highway and is to be used solely for competition.

14 (b) IMPLEMENTATION.—Not later than 2 years after  
15 the date of enactment of this Act, the Administrator of  
16 the Environmental Protection Agency shall promulgate  
17 final regulations as necessary to implement subsection (a).

18 **TITLE VII—ADVANCED RE-**  
19 **SEARCH PROJECTS AGENCY—**  
20 **ENERGY**

21 **SEC. 7001. ARPA-E AMENDMENTS.**

22 (a) ESTABLISHMENT.—Section 5012(b) of the Amer-  
23 ica COMPETES Act (42 U.S.C. 16538(b)) is amended  
24 by striking “development of energy technologies” and in-  
25 serting “development of transformative science and tech-

1 nology solutions to address the energy and environmental  
2 missions of the Department”.

3 (b) GOALS.—Section 5012(c) of the America COM-  
4 PETES Act (42 U.S.C. 16538(c)) is amended—

5 (1) by striking paragraph (1)(A) and inserting  
6 the following:

7 “(A) to enhance the economic and energy  
8 security of the United States through the devel-  
9 opment of energy technologies that—

10 “(i) reduce imports of energy from  
11 foreign sources;

12 “(ii) reduce energy-related emissions,  
13 including greenhouse gases;

14 “(iii) improve the energy efficiency of  
15 all economic sectors;

16 “(iv) provide transformative solutions  
17 to improve the management, clean-up, and  
18 disposal of radioactive waste and spent nu-  
19 clear fuel; and

20 “(v) improve the resilience, reliability,  
21 and security of infrastructure to produce,  
22 deliver, and store energy; and”;

23 (2) in paragraph (2), in the matter preceding  
24 subparagraph (A), by striking “energy technology

1 projects” and inserting “advanced technology  
2 projects”.

3 (c) RESPONSIBILITIES.—Section 5012(e)(3)(A) of  
4 the America COMPETES Act (42 U.S.C.  
5 16538(e)(3)(A)) is amended by striking “energy”.

6 (d) REPORTS AND ROADMAPS.—Section 5012(h) of  
7 the America COMPETES Act (42 U.S.C. 16538(h)) is  
8 amended to read as follows:

9 “(h) REPORTS AND ROADMAPS.—

10 “(1) ANNUAL REPORT.—As part of the annual  
11 budget request submitted for each fiscal year, the  
12 Director shall provide to the relevant authorizing  
13 and appropriations committees of Congress a report  
14 that—

15 “(A) describes projects supported by  
16 ARPA-E during the previous fiscal year;

17 “(B) describes projects supported by  
18 ARPA-E during the previous fiscal year that  
19 examine topics and technologies closely related  
20 to other activities funded by the Department,  
21 and includes an analysis of whether in sup-  
22 porting such projects, the Director is in compli-  
23 ance with subsection (i)(1)(A); and

1           “(C) describes current, proposed, and  
2           planned projects to be carried out pursuant to  
3           subsection (e)(3)(D).

4           “(2) STRATEGIC VISION ROADMAP.—Not later  
5           than October 1, 2021, and every four years there-  
6           after, the Director shall provide to the relevant au-  
7           thorizing and appropriations committees of Congress  
8           a roadmap describing the strategic vision that  
9           ARPA-E will use to guide the choices of ARPA-E  
10          for future technology investments over the following  
11          4 fiscal years.”.

12          (e) COORDINATION AND NONDUPLICATION.—Section  
13          5012(i)(1) of the America COMPETES Act (42 U.S.C.  
14          16538(i)(1)) is amended to read as follows:

15               “(1) IN GENERAL.—To the maximum extent  
16               practicable, the Director shall ensure that—

17                       “(A) the activities of ARPA-E are coordi-  
18                       nated with, and do not duplicate the efforts of,  
19                       programs and laboratories within the Depart-  
20                       ment and other relevant research agencies; and

21                       “(B) ARPA-E does not provide funding  
22                       for a project unless the prospective grantee  
23                       demonstrates sufficient attempts to secure pri-  
24                       vate financing or indicates that the project is  
25                       not independently commercially viable.”.

1 (f) EVALUATION.—Section 5012(l) of the America  
2 COMPETES Act (42 U.S.C. 16538(l)) is amended—

3 (1) by striking paragraph (1) and inserting the  
4 following:

5 “(1) IN GENERAL.—Not later than 3 years  
6 after the date of enactment of this paragraph, the  
7 Secretary is authorized to enter into a contract with  
8 the National Academy of Sciences under which the  
9 National Academy shall conduct an evaluation of  
10 how well ARPA-E is achieving the goals and mis-  
11 sion of ARPA-E.”; and

12 (2) in paragraph (2)—

13 (A) in the matter preceding subparagraph  
14 (A), by striking “shall” and inserting “may”;  
15 and

16 (B) in subparagraph (A), by striking “the  
17 recommendation of the National Academy of  
18 Sciences” and inserting “a recommendation”.

19 (g) AUTHORIZATION OF APPROPRIATIONS.—Para-  
20 graph (2) of section 5012(o) of the America COMPETES  
21 Act (42 U.S.C. 16538(o)) is amended to read as follows:

22 “(2) AUTHORIZATION OF APPROPRIATIONS.—  
23 Subject to paragraph (4), there are authorized to be  
24 appropriated to the Director for deposit in the  
25 Fund, without fiscal year limitation—

1 “(A) \$497,000,000 for fiscal year 2021;  
2 “(B) \$567,000,000 for fiscal year 2022;  
3 “(C) \$651,000,000 for fiscal year 2023;  
4 “(D) \$750,000,000 for fiscal year 2024;  
5 and  
6 “(E) \$875,000,000 for fiscal year 2025.”.

7 (h) TECHNICAL AMENDMENTS.—Section 5012 of the  
8 America COMPETES Act (42 U.S.C. 16538) is amend-  
9 ed—

10 (1) in subsection (g)(3)(A)(iii), by striking  
11 “subpart” each place it appears and inserting “sub-  
12 paragraph”; and

13 (2) in subsection (o)(4)(B), by striking  
14 “(c)(2)(D)” and inserting “(c)(2)(C)”.

## 15 **TITLE VIII—TECHNOLOGY** 16 **TRANSFER**

### 17 **SECTION 8001. DEFINITIONS.**

18 In this title:

19 (1) CLEAN ENERGY TECHNOLOGY.—The term  
20 “clean energy technology” means a technology that  
21 significantly reduces energy use, increases energy ef-  
22 ficiency, reduces greenhouse gas emissions, reduces  
23 emissions of other pollutants, or mitigates other neg-  
24 ative environmental consequences.

1           (2) DEPARTMENT.—The term “Department”  
2 means the Department of Energy.

3           (3) DIRECTOR.—The term “Director” means  
4 the Director of each National Laboratory and the  
5 Director of each Department of Energy single-pur-  
6 pose research facility.

7           (4) ECONOMICALLY DISTRESSED AREA.—The  
8 term “economically distressed area” has the mean-  
9 ing described in section 301(a) of the Public Works  
10 and Economic Development Act of 1965 (42 U.S.C.  
11 3161(a)).

12           (5) GRANT.—The term “grant” means a grant  
13 award, cooperative agreement award, or any other fi-  
14 nancial assistance arrangement that the Secretary of  
15 Energy determines to be appropriate.

16           (6) INSTITUTION OF HIGHER EDUCATION.—The  
17 term “institution of higher education” has the  
18 meaning given such term in the Higher Education  
19 Act of 1965, as amended (20 U.S.C. 1001).

20           (7) NATIONAL LABORATORY.—The term “Na-  
21 tional Laboratory” has the meaning given that term  
22 in section 2 of the Energy Policy Act of 2005 (42  
23 U.S.C. 15801).

24           (8) SECRETARY.—The term “Secretary” means  
25 the Secretary of Energy.

1     **Subtitle A—National Clean Energy**  
2     **Technology Transfer Programs**

3     **SEC. 8101. REGIONAL CLEAN ENERGY INNOVATION PRO-**  
4             **GRAM.**

5             (a) DEFINITIONS.—In this section:

6                 (1) REGIONAL CLEAN ENERGY INNOVATION  
7             PARTNERSHIP.—The term “regional clean energy in-  
8             novation partnership” means a group of one or more  
9             persons, including a covered consortium, who per-  
10            form a collection of activities that are coordinated by  
11            such covered consortium to carry out the purposes  
12            of the program under subsection (c) in a region of  
13            the United States.

14                (2) COVERED CONSORTIUM.—The term “cov-  
15            ered consortium” means an individual or group of  
16            individuals in partnership with a government entity,  
17            including a State, local, or tribal government or unit  
18            of such government, and at least 2 or more of the  
19            following additional entities—

20                        (A) an institution of higher education or  
21                        higher education consortium;

22                        (B) a workforce training provider, includ-  
23                        ing vocational schools and community colleges;

24                        (C) a private sector entity;

25                        (D) a nonprofit organization;



1 (E) a community group;

2 (F) a labor group;

3 (G) a National Laboratory;

4 (H) a venture development organization;

5 (I) an organization focused on clean energy  
6 technology innovation or entrepreneurship;

7 (J) a business accelerator or incubator;

8 (K) a private sector entity or group of en-  
9 tities, including a trade or industry association;

10 (L) an economic development organization;

11 (M) a manufacturing facility or organiza-  
12 tion;

13 (N) a clean energy incubator or accel-  
14 erator; or

15 (O) any other entity that the Secretary de-  
16 termines to be relevant.

17 (3) PROGRAM.—The term “program” means  
18 the Regional Clean Energy Innovation Program au-  
19 thorized in subsection (b).

20 (4) FRONTLINE COMMUNITY.—The term  
21 “frontline community” means a community with sig-  
22 nificant representation of communities of color, low-  
23 income communities, or Tribal and indigenous com-  
24 munities, that experiences, or is at risk of experi-

1       encing higher or more adverse human health or envi-  
2       ronmental effects.

3       (b) IN GENERAL.—The Secretary shall establish a  
4       Regional Clean Energy Innovation Program designed to  
5       accelerate the pace of innovation of clean energy tech-  
6       nologies through the formation or support of regional  
7       clean energy innovation partnerships that—

8               (1) are responsive to the energy resources,  
9       needs of industry, workforce, policy landscape, and  
10      clean energy innovation capabilities of the region of  
11      the country in which such partnership is located;

12             (2) enhance and accelerate clean energy innova-  
13      tion;

14             (3) are located in diverse geographic regions of  
15      the United States, including United States terri-  
16      tories; and

17             (4) improve economic development outcomes in  
18      economically distressed areas.

19      (c) PURPOSES OF THE PROGRAM.—The purposes of  
20      the program established under subsection (a) are to—

21             (1) improve the competitiveness of United  
22      States' clean energy technology research, develop-  
23      ment, demonstration, and commercial application;

24             (2) to identify and leverage the competitive  
25      strengths of and address clean energy challenges

1 that are particular to diverse geographic regions of  
2 the United States to stimulate innovation in clean  
3 energy technologies;

4 (3) support the development of clean energy in-  
5 novation companies in diverse geographic regions of  
6 the United States;

7 (4) promote the economic development of and  
8 enhance the economic resilience of diverse geo-  
9 graphic regions of the United States;

10 (5) support the development of tools and tech-  
11 nologies best suited for use in low-income and front-  
12 line communities; and

13 (6) support the development of manufacturing  
14 capabilities and supply chains relevant to clean en-  
15 ergy technologies in the United States.

16 (d) REGIONAL CLEAN ENERGY INNOVATION PART-  
17 NERSHIPS.—

18 (1) IN GENERAL.—The Secretary shall competi-  
19 tively award grants to covered consortia to establish  
20 or support regional clean energy innovation partner-  
21 ships that achieve the purposes of the program in  
22 subsection (c).

23 (2) PERMISSIBLE ACTIVITIES.—Grants awarded  
24 under this subsection shall be used for activities de-  
25 termined appropriate by the Secretary to achieve the

1 purposes of the program in subsection (c), includ-  
2 ing—

3 (A) facilitating the commercial application  
4 of clean energy products, processes, and serv-  
5 ices, including through research, development,  
6 demonstration, technology transfer, or support  
7 of clean energy companies;

8 (B) planning among participants of a re-  
9 gional clean energy innovation partnership to  
10 improve the strategic coordination of the part-  
11 nership;

12 (C) improving stakeholder involvement in  
13 the development of goals and activities of a re-  
14 gional clean energy innovation partnership;

15 (D) assessing different incentive mecha-  
16 nisms for clean energy development and com-  
17 mercial application in the region;

18 (E) hosting events and conferences; and

19 (F) establishing and updating roadmaps to  
20 measure progress on relevant goals, such as  
21 those relevant to metrics developed under sub-  
22 section (g).

23 (3) APPLICATIONS.—Each application sub-  
24 mitted to the Secretary under paragraph (1) may in-  
25 clude—

1 (A) a list of members and roles of mem-  
2 bers of the covered consortia, as well as any  
3 other stakeholders supporting the activities of  
4 the regional clean energy innovation partner-  
5 ship;

6 (B) a description of the proposed outcomes  
7 of the regional clean energy innovation partner-  
8 ship;

9 (C) an assessment of the relevant clean en-  
10 ergy innovation assets needed in a region to  
11 achieve proposed outcomes, such as education  
12 and training programs, research facilities, infra-  
13 structure or site development, access to capital,  
14 manufacturing capabilities, or other assets;

15 (D) a description of proposed activities  
16 that the regional clean energy innovation part-  
17 nership plans to undertake and how the pro-  
18 posed activities will achieve the purposes de-  
19 scribed in subsection (c) and the proposed out-  
20 comes in subparagraph (B);

21 (E) a description of the geographical re-  
22 gion that will engage in the partnership;

23 (F) a plan for attracting additional funds  
24 and identification of funding sources from non-  
25 Federal sources to deliver the proposed out-

1 comes of the regional clean energy innovation  
2 partnership; and

3 (G) a plan for sustaining activities of the  
4 regional clean energy innovation partnership  
5 after funds received under this program have  
6 been expended.

7 (4) CONSIDERATIONS.—In selecting covered  
8 consortia for funding under the program, the Sec-  
9 retary shall—

10 (A) give special consideration to applica-  
11 tions from entities located in an economically  
12 distressed area; and

13 (B) ensure that there is geographic diver-  
14 sity among the covered consortia selected to re-  
15 ceive funding.

16 (5) AWARD AMOUNT.—Grants given out under  
17 this Program shall be in an amount not greater than  
18 \$10,000,000, with the total grant award in any year  
19 less than that in the previous year.

20 (6) COST SHARE.—For grants that are dis-  
21 bursed over the course of three or more years, the  
22 Secretary shall require, as a condition of receipt of  
23 funds under this section, that a covered consortium  
24 provide not less than 50 percent of the funding for

1 the activities of the regional clean energy partner-  
2 ship under this section for years 3, 4, and 5.

3 (7) DURATION.—Each grant under paragraph  
4 (1) shall be for a period of not longer than 5 years.

5 (8) RENEWAL.—A grant award made to a re-  
6 gional clean energy innovation partnership under  
7 this section may be renewed for a period of not more  
8 than 5 years, subject to a rigorous merit review  
9 based on the progress of a regional clean energy in-  
10 novation partnership towards achieving the purposes  
11 of the program in subsection (c) and the metrics de-  
12 veloped under subsection (g).

13 (9) ADMINISTRATIVE COSTS.—The Secretary  
14 may allow a covered consortium that receives funds  
15 under this section to allocate a portion of the fund-  
16 ing received to be used for administrative or indirect  
17 costs.

18 (10) FUNDING.—The Secretary may accept  
19 funds from other Federal agencies to support fund-  
20 ing and activities under this section.

21 (e) PLANNING FUNDS.—The Secretary may competi-  
22 tively award grants in an amount no greater than  
23 \$2,000,000 for a period not longer than 2 years to an enti-  
24 ty consisting of a government entity, including a State,  
25 local, or tribal government or unit of such government or

1 any entity listed under subsection (a)(2) to plan a regional  
2 clean energy innovation partnership or establish a covered  
3 consortium for the purpose of applying for funds under  
4 subsection (b).

5 (f) INFORMATION SHARING.—As part of the pro-  
6 gram, the Secretary shall support the gathering, analysis,  
7 and dissemination of information on best practices for de-  
8 veloping and operating successful regional clean energy in-  
9 novation partnerships.

10 (g) METRICS.—In evaluating a grant renewals under  
11 section (d)(8), the Secretary shall work with program eval-  
12 uation experts to develop and make publicly available  
13 metrics to assess the progress of a regional clean energy  
14 innovation partnership towards achieving the purposes of  
15 the program in section (c). Such metrics may include—

16 (1) the number and quality of—

17 (A) new clean energy companies created in  
18 the region as a result of activities carried out  
19 under the regional clean energy innovation part-  
20 nership;

21 (B) new or expanded workforce develop-  
22 ment or training programs; and

23 (C) support services provided to clean en-  
24 ergy technology developers in the region.



1           (2) changes in clean energy employment in the  
2       region as a result of activities carried out under the  
3       regional clean energy innovation partnership ; and

4           (3) the amount of capital investment in clean  
5       energy companies in the region as a result of activi-  
6       ties carried out under the regional clean energy in-  
7       novation partnership grant.

8       (h) COORDINATION.—In carrying out the program,  
9       the Secretary may coordinate with relevant programs at  
10      other Federal agencies, including—

11           (1) the Office of Innovation and Entrepreneur-  
12      ship under the Economic Development Administra-  
13      tion, including the Regional Innovation Program  
14      under section 27 of the Stevenson-Wydler Tech-  
15      nology Innovation Act of 1980 (15 U.S.C. 3722);

16           (2) the Hollings Manufacturing Extension Part-  
17      nership Program under section 25(a) of the National  
18      Institute of Standards and Technology Act (15  
19      U.S.C. 278k);

20           (3) the Manufacturing USA Program under  
21      section 34(a) of the National Institute of Standards  
22      and Technology Act (15 U.S.C. 278s);

23           (4) the Defense Manufacturing Communities  
24      Support Program under section 846 of the John S.

1 McCain National Defense Authorization Act for Fis-  
2 cal Year 2019 (10 U.S.C. 2501 note); and

3 (5) the Office of Economic Adjustment at the  
4 Department of Defense.

5 (i) EVALUATION BY COMPTROLLER GENERAL.—Not  
6 later than 3 years after the date of the enactment of this  
7 Act, and every 3 years thereafter, the Comptroller General  
8 shall submit to the Committee on Science, Space, and  
9 Technology of the House of Representatives and the Com-  
10 mittee on Energy and Natural Resources of the Senate  
11 an evaluation on the operation of the program during the  
12 most recent 3-year period, including—

13 (1) an assessment of the progress made towards  
14 achieving the purposes specified in subsection (c)  
15 based on the metrics developed under subsection (g);

16 (2) the short-term and long-term metrics used  
17 to determine the success of the program under sub-  
18 section (g), and any changes recommended to the  
19 metrics used;

20 (3) the regional clean energy innovation part-  
21 nerships that have received grants under subsection  
22 (d); and

23 (4) any recommendations on how the program  
24 may be improved.

1 (j) NATIONAL LABORATORIES.—In supporting tech-  
2 nology transfer activities at the National Laboratories, the  
3 Secretary shall encourage partnerships with entities that  
4 are located in the same region or State as a National Lab-  
5 oratory.

6 (k) AUTHORIZATION OF APPROPRIATIONS.—There  
7 are authorized to be appropriated to the Secretary to carry  
8 out this section \$50,000,000 for each of fiscal years 2021  
9 through 2025.

10 **SEC. 8102. NATIONAL CLEAN ENERGY INCUBATOR PRO-**  
11 **GRAM.**

12 (a) CLEAN ENERGY INCUBATOR DEFINED.—In this  
13 section, the term “clean energy incubator”—

14 (1) means any entity that is designed to accel-  
15 erate the commercial application of clean energy  
16 technologies by providing—

17 (A) physical workspace, labs, and proto-  
18 typing facilities to support clean energy  
19 startups or established clean energy companies;  
20 or

21 (B) companies developing such tech-  
22 nologies with support, resources, and services,  
23 including—

24 (i) access to business education and  
25 counseling;

1 (ii) mentorship opportunities; and  
2 (iii) other services rendered for the  
3 purpose of aiding the development and  
4 commercial application of a clean energy  
5 technology; and

6 (2) may include a program within or established  
7 by a National Laboratory, an institution of higher  
8 education or a State, local, or tribal government.

9 (b) PROGRAM ESTABLISHMENT.—Not later than 180  
10 days after the enactment of this Act, the Secretary, acting  
11 through the Technology Transfer Coordinator established  
12 in section 1001 (a) of the Energy Policy Act of 2005 (42  
13 U.S.C. 16391 (a)), shall establish a Clean Energy Incu-  
14 bator Program (herein referred to as the “program”) to  
15 competitively award grants to clean energy incubators.

16 (c) CLEAN ENERGY INCUBATOR SELECTION.—In  
17 awarding grants to clean energy incubators under sub-  
18 section (b), the Secretary shall prioritize funding clean en-  
19 ergy incubators that—

20 (1) partner with entities that carry out activi-  
21 ties relevant to the activities of such incubator and  
22 that operate at the local, State, and regional levels;  
23 (2) support the commercial application activi-  
24 ties of startup companies focused on physical hard-

1       ware, computational, or integrated hardware and  
2       software technologies;

3           (3) are located in geographically diverse regions  
4       of the United States;

5           (4) are located in, or partner with entities lo-  
6       cated in, economically-distressed areas and

7           (5) support the development of entities focused  
8       on expanding clean energy tools and technologies to  
9       low-income and frontline communities; and

10          (6) support the commercial application of tech-  
11       nologies being developed by clean energy entre-  
12       preneurs from underrepresented backgrounds; and

13          (7) have a plan for sustaining activities of the  
14       incubator after grant funds received under this pro-  
15       gram have been expended.

16       (d) AWARD LIMITS.—The Secretary shall not award  
17       more than \$4,000,000 to one or more incubators in one  
18       given State, per fiscal year.

19       (e) DURATION.—Each grant under subsection (b)  
20       shall be for a period of no longer than 5 years, subject  
21       to the availability of appropriations.

22       (f) USE OF FUNDS.—An entity receiving a grant  
23       under this section may use grant amounts for operating  
24       expenses.

1 (g) RENEWAL.—An award made to a clean energy  
2 incubator under this section may be renewed for a period  
3 of not more than 3 years, subject to merit review.

4 (h) EVALUATION.—In accordance with section  
5 8307(b) of this Act, the Secretary shall submit 3 years  
6 after the enactment of this Act and every 3 years there-  
7 after to the Committee on Science, Space, and Technology  
8 of the House of Representatives and the Committee on  
9 Energy and Natural Resources of the Senate an evalua-  
10 tion of the program established under this section that in-  
11 cludes analyses of the performance of the clean energy in-  
12 cubators.

13 (i) AUTHORIZATION OF APPROPRIATIONS.—There  
14 are authorized to be appropriated to the Secretary to carry  
15 out this section \$15,000,000 for each of fiscal years 2021  
16 through 2025.

17 **SEC. 8103. CLEAN ENERGY TECHNOLOGY UNIVERSITY**  
18 **PRIZE COMPETITION.**

19 (a) DEFINITIONS.—In this section:

20 (1) ELIGIBLE ENTITY.—The term “eligible enti-  
21 ty” means a non-profit entity, an institution of high-  
22 er education, or an entity working with one or more  
23 institutes of higher education.

24 (2) MINORITY-SERVING INSTITUTION.—The  
25 term “minority-serving institution” means an insti-

1       tution described in section 371(a) of the Higher  
2       Education Act of 1965 (20 U.S.C. 1067q(a)).

3       (b) IN GENERAL.—The Secretary shall establish a  
4       program, known as the “Clean Energy Technology Uni-  
5       versity Prize”, to award funding for eligible entities to  
6       carry out regional and one national clean energy tech-  
7       nology prize competitions, under section 24 of the Steven-  
8       son-Wydler Technology Innovation Act of 1980 (15 U.S.C.  
9       3719). In carrying out such prize competitions, students  
10      shall compete to develop a business model for furthering  
11      the commercial application of an innovative clean energy  
12      technology. The purpose of this program is to encourage  
13      student interest in clean energy technology development  
14      and to help students solve challenges in clean energy tech-  
15      nology commercial application, with participation from di-  
16      verse geographical regions of the United States.

17      (c) TRAINING FUNDING.—In carrying out this pro-  
18      gram, the Secretary may provide funding to train partici-  
19      pating students in skills needed for the successful commer-  
20      cial application of clean energy technologies, including  
21      through virtual training sessions.

22      (d) PRIORITIZATION.—In awarding grants under this  
23      section, the Secretary shall prioritize awarding grants to  
24      eligible entities that work with students at minority-serv-  
25      ing institutions.

1       (e) COORDINATION.—In carrying out this program,  
2 the Secretary shall coordinate and partner with existing  
3 clean energy technology prize competitions. In doing so,  
4 the Secretary may develop and disseminate best practices  
5 for administering prize competitions under this section.

6       (f) REPORT.—In accordance with section 8307(a) of  
7 this Act, the Secretary shall report annually on the  
8 progress and implementation of the program established  
9 under subsection (b).

10      (g) EVALUATION.—In accordance with section  
11 8307(b) of this Act, the Secretary shall submit 3 years  
12 after the enactment of this Act and every 3 years there-  
13 after to the Committee on Science, Space, and Technology  
14 of the House of Representatives and the Committee on  
15 Energy and Natural Resources of the Senate an evalua-  
16 tion on the long-term outcomes of the program established  
17 under this section and the progress towards achieving the  
18 purposes of the program in subsection (b).

19      (h) AUTHORIZATION OF APPROPRIATIONS.—There  
20 are authorized to be appropriated to the Secretary to carry  
21 out the activities authorized in this section \$1,000,000 for  
22 each of fiscal years 2021 through 2025.

23 **SEC. 8104. ENERGY I-CORPS.**

24      (a) IN GENERAL.—The Secretary of Energy (herein-  
25 after in this section referred to as the “Secretary”), acting



1 through the Technology Transfer Coordinator established  
2 in section 1001(a) of the Energy Policy Act of 2005 (42  
3 U.S.C. 16391(a)), shall carry out a program to support  
4 commercial application education, training, professional  
5 development, and mentorship called the “Energy Innova-  
6 tion Corps Program” (hereinafter in this section referred  
7 to as “Energy I-Corps”).

8 (b) PURPOSE.—The purposes of Energy I-Corps shall  
9 be to help participants described in subsection (c) develop  
10 skills and to accelerate the commercial application of clean  
11 energy technologies and other technologies related to the  
12 mission of the Department of Energy.

13 (c) PARTICIPANTS.—The Secretary shall carry out  
14 this program for participants consisting of—

15 (1) employees at the National Laboratories; and  
16 (2) researchers, students, and clean energy en-  
17 trepreneurs.

18 (d) ACTIVITIES.—In carrying out Energy I-Corps,  
19 the Secretary shall support—

20 (1) commercial application education, training,  
21 and mentoring activities, including workshops, semi-  
22 nars, and short courses;  
23 (2) engagement with private sector entities to  
24 identify future research and development activities;  
25 and

1           (3) any other activities that the Secretary de-  
2       termines to be relevant.

3       (e) STATE AND LOCAL PARTNERSHIPS.—In carrying  
4       out Energy I-Corps, the Secretary may engage in partner-  
5       ships with National Laboratories, State and local govern-  
6       ments, economic development organizations, and nonprofit  
7       organizations to broaden access to Energy I-Corps and  
8       support relevant activities under this subsection.

9       (f) FEDERAL COORDINATION.—In carrying out En-  
10      ergy I-Corps, the Secretary may coordinate with any other  
11      Federal science agency program that carries out a similar  
12      program to support entrepreneurial and commercial appli-  
13      cation education, training, professional development, and  
14      mentorship in order to share best practices.

15      (g) EVALUATION.—The Secretary shall submit 3  
16      years after the enactment of this Act and every 3 years  
17      thereafter to the Committee on Science, Space, and Tech-  
18      nology of the House of Representatives and the Committee  
19      on Energy and Natural Resources of the Senate an evalua-  
20      tion on the long-term effectiveness of the Energy I-Corps  
21      program and the progress towards achieving the purposes  
22      of the program in subsection (a).

23      (h) AUTHORIZATION OF APPROPRIATIONS.—There  
24      are authorized to be appropriated to the Technology  
25      Transfer Coordinator established in section 1001(a) of the

1 Energy Policy Act of 2005 (42 U.S.C. 16391(a)) to carry  
2 out the activities authorized in subsection (a)—

3 (1) for participants under subsection (c)(1)  
4 \$3,000,000 for each of fiscal years 2021 through  
5 2025; and

6 (2) for participants under subsection (c)(2)  
7 \$2,000,000 for each of fiscal years 2021 through  
8 2025.

9 **SEC. 8104. CLEAN ENERGY TECHNOLOGY TRANSFER CO-**  
10 **ORDINATION.**

11 (a) IN GENERAL.—The Secretary, acting through the  
12 Technology Transfer Coordinator established in section  
13 1001 (a) of the Energy Policy Act of 2005 (42 U.S.C.  
14 16391 (a)), shall support the coordination of relevant  
15 technology transfer programs, including those authorized  
16 in sections 8101, 8102, 8103, 8202, and 8206 of this Act,  
17 that advance the commercial application of clean energy  
18 technologies nationally and across all energy sectors. In  
19 particular, the Secretary may support activities to—

20 (1) facilitate the sharing of information on best  
21 practices for successful operation of clean energy  
22 technology transfer programs;

23 (2) coordinate resources and improve coopera-  
24 tion among clean energy technology transfer pro-  
25 grams;

1           (3) facilitate connections between entrepreneurs  
2           and start-up companies and the variety of programs  
3           related to clean energy technology transfer under the  
4           Department; and

5           (4) facilitate the development of metrics to  
6           measure the impact of clean energy technology  
7           transfer programs on—

8                   (A) advancing the development, demonstra-  
9                   tion, and commercial application of clean en-  
10                  ergy technologies;

11                  (B) increasing the competitiveness of  
12                  United States in the clean energy sector, in-  
13                  cluding in manufacturing; and

14                  (C) commercial application of clean energy  
15                  technologies being developed by entrepreneurs  
16                  from under-represented backgrounds.

17       (b) AUTHORIZATION OF APPROPRIATIONS.—There  
18       are authorized to be appropriated to the Secretary to carry  
19       out the activities in this section \$3,000,000 for each of  
20       fiscal years 2021 through 2025.

21       **Subtitle B—Supporting Technology**  
22       **Development At the National**  
23       **Laboratories**

24       **SEC. 8201. LAB PARTNERING SERVICE PILOT PROGRAM.**

25       (a) PILOT PROGRAM.—

1           (1) IN GENERAL.—The Secretary, acting  
2           through the Technology Transfer Coordinator estab-  
3           lished in section 1001(a) of the Energy Policy Act  
4           of 2005 (42 U.S.C. 16391(a)), shall establish a Lab  
5           Partnering Service Pilot Program (hereinafter in  
6           this section referred to as the “pilot program”).

7           (2) PURPOSES.—The purposes of the pilot pro-  
8           gram are to provide services that encourage and  
9           support partnerships between the National Labora-  
10          tories and public and private sector entities, and to  
11          improve communication of research, development,  
12          demonstration, and commercial application projects  
13          and opportunities at the National Laboratories to  
14          potential partners through the development of a  
15          website and the provision of services, in collaboration  
16          with relevant external entities.

17          (3) ACTIVITIES.—In carrying out this pilot pro-  
18          gram, the Secretary shall—

19                (A) conduct outreach to and engage with  
20                relevant public and private entities;

21                (B) identify and disseminate best practices  
22                for strengthening connections between the Na-  
23                tional Laboratories and public and private sec-  
24                tor entities; and

1 (C) develop a website to disseminate infor-  
2 mation on—

3 (i) different partnering mechanisms  
4 for working with the National Labora-  
5 tories;

6 (ii) National Laboratory experts and  
7 research areas; and

8 (iii) National Laboratory facilities and  
9 user facilities.

10 (b) METRICS.—The Secretary shall support the de-  
11 velopment of metrics, including conversion metrics, to de-  
12 termine the effectiveness of the pilot program in achieving  
13 the purposes in subsection (a) and the number and types  
14 of partnerships established between public and private sec-  
15 tor entities and the National Laboratories compared to  
16 baseline data.

17 (c) COORDINATION.—In carrying out the activities  
18 authorized in this section, the Secretary shall coordinate  
19 with the Directors and dedicated technology transfer staff  
20 at the National Laboratories, in particular for match-  
21 making services for individual projects, which should be  
22 led by the National Laboratories.

23 (d) FUNDING EMPLOYEE PARTNERING ACTIVI-  
24 TIES.—The Secretary shall delegate to the Directors the

1 authority to compensate National Laboratory employees  
2 providing services under this section.

3 (e) DURATION.—Subject to the availability of appro-  
4 priations, the pilot program established in this section  
5 shall operate for not less than 3 years and may be built  
6 off an existing program.

7 (f) EVALUATION.—Not later than 6 months after the  
8 completion of this pilot program, the Secretary shall sup-  
9 port the evaluation of the success of the pilot program in  
10 achieving the purposes in subsection (a) and shall submit  
11 the evaluation to the Committee on Science, Space, and  
12 Technology of the House of Representatives and the Com-  
13 mittee on Energy and Natural Resources of the Senate.  
14 The assessment shall include analyses of the performance  
15 of the pilot program based on the metrics developed under  
16 subsection (b).

17 (g) AUTHORIZATION OF APPROPRIATIONS.—There  
18 are authorized to be appropriated to the Secretary  
19 \$2,000,000 for each of fiscal years 2021 through 2023  
20 to carry out subsections (a), (b), (c), (e), and (f) and  
21 \$1,700,000 for each of fiscal years 2021 through 2023  
22 for national laboratory employees to provide services under  
23 subsection (d).

1   **SEC. 8202. LAB-EMBEDDED ENTREPRENEURSHIP PRO-**  
2                   **GRAM.**

3           (a) IN GENERAL.—The Secretary shall competitively  
4   award grants to National Laboratories for the purpose of  
5   establishing or supporting Lab-Embedded Entrepreneur-  
6   ship Programs.

7           (b) PURPOSES.—The purposes of such programs are  
8   to provide entrepreneurial fellows with access to National  
9   Laboratory research facilities, National Laboratory exper-  
10   tise, and mentorship to perform research and development  
11   and gain expertise that may be required or beneficial for  
12   the commercial application of research ideas.

13          (c) ENTREPRENEURIAL FELLOWS.—An entrepre-  
14   neurial fellow participating in a program described in sub-  
15   section (a) shall be provided with—

16           (1) opportunities for entrepreneurial training,  
17           professional development, and exposure to leaders  
18           from academia, industry, government, and finance  
19           who may serve as advisors to or partners of the fel-  
20           low;

21           (2) financial and technical support for research,  
22           development, and commercial application activities;

23           (3) fellowship awards to cover costs of living,  
24           health insurance, and travel stipends for the dura-  
25           tion of the fellowship; and



1           (4) any other resources determined appropriate  
2       by the Secretary.

3       (d) PROGRAM ACTIVITIES.—Each eligible entity that  
4       receives funding under this section shall support entrepre-  
5       neurial fellows by providing—

6           (1) access to facilities and expertise within the  
7       National Laboratory;

8           (2) engagement with external stakeholders; and

9           (3) market and customer development opportu-  
10      nities.

11      (e) ADMINISTRATION.—Eligible entities that receive  
12      grants under this section shall prioritize the support and  
13      success of the entrepreneurial fellow with regards to pro-  
14      fessional development and development of a relevant tech-  
15      nology.

16      (f) PARTNERSHIPS.—In carrying out a Lab-Embed-  
17      ded Entrepreneurship Program, a National Laboratory  
18      may partner with an external entity, including—

19           (1) a nonprofit organization;

20           (2) an institution of higher education; or

21           (3) a federally-owned corporation.

22      (g) METRICS.—The Secretary shall support the de-  
23      velopment of short-term and long-term metrics to assess  
24      the effectiveness of programs receiving a grant under sub-

1 section (a) in achieving the purposes of the program in  
2 subsection (b).

3 (h) EVALUATION.—In accordance with section  
4 8307(b) of this Act, not later than 3 years after the date  
5 of the enactment of this Act, and every 3 years thereafter,  
6 the Secretary shall submit to the Committee on Science,  
7 Space, and Technology of the House of Representatives  
8 and the Committee on Energy and Natural Resources of  
9 the Senate an evaluation of the effectiveness of the pro-  
10 grams under subsection (a) based on the metrics developed  
11 pursuant to subsection (g).

12 (i) COORDINATION.—The Secretary shall oversee the  
13 planning and coordination of grants under subsection (a)  
14 and shall identify and disseminate best practices for  
15 achieving the purposes of subsection (b) to eligible entities  
16 that receive grants under this section.

17 (j) INTERAGENCY COLLABORATION.—The Secretary  
18 shall collaborate with other executive branch agencies, in-  
19 cluding the Department of Defense and other agencies  
20 with federal laboratories, regarding opportunities to part-  
21 ner with programs receiving a grant under subsection (a).

22 (i) AUTHORIZATION OF APPROPRIATIONS.—There  
23 are authorized to be appropriated to the Secretary to carry  
24 out the activities authorized in this section \$25,000,000  
25 for each of fiscal years 2021 through 2025.

1 **SEC. 8203. SMALL BUSINESS VOUCHER PROGRAM.**

2 Section 1003 of the Energy Policy Act of 2005 (42  
3 U.S.C. 16393) is amended—

4 (1) in subsection (a)—

5 (A) in the matter preceding paragraph (1),  
6 by striking “, and may require the Director of  
7 a single-purpose research facility,” and insert-  
8 ing “(as defined in section 2) and the Director  
9 of each single-purpose research facility”;

10 (B) in paragraph (1)—

11 (i) by striking “increase” and insert-  
12 ing “encourage”; and

13 (ii) by striking “collaborative re-  
14 search,” and inserting “research, develop-  
15 ment, demonstration, and commercial ap-  
16 plication activities, including product devel-  
17 opment,”;

18 (C) in paragraph (2), by striking “procure-  
19 ment and collaborative research” and inserting  
20 “procurement and the activities described in  
21 paragraph (1)”;

22 (D) in paragraph (3)—

23 (i) by inserting “facilities,” before  
24 “training”; and

25 (ii) by striking “procurement and col-  
26 laborative research activities” and insert-

1 ing “procurement and the activities de-  
2 scribed in paragraph (1)”; and

3 (E) in paragraph (5), by striking “for the  
4 program under subsection (b)” and inserting  
5 “and metrics for the programs under sub-  
6 sections (b) and (c)”;

7 (2) by redesignating subsections (c) and (d) as  
8 subsections (d) and (e), respectively;

9 (3) by inserting after subsection (b) the fol-  
10 lowing:

11 “(c) SMALL BUSINESS VOUCHER PROGRAM.—

12 “(1) DEFINITIONS.—In this subsection:

13 “(A) DIRECTOR.—The term ‘Director’  
14 means—

15 “(i) the Director of each National  
16 Laboratory; and

17 “(ii) the Director of each single-pur-  
18 pose research facility.

19 “(B) NATIONAL LABORATORY.—The term  
20 ‘National Laboratory’ has the meaning given  
21 the term in section 2.

22 “(C) PROGRAM.—The term ‘program’  
23 means the program established under para-  
24 graph (2).

1           “(D) SMALL BUSINESS CONCERN.—The  
2           term ‘small business concern’ has the meaning  
3           given such term in section 3 of the Small Busi-  
4           ness Act (15 U.S.C. 632).

5           “(2) ESTABLISHMENT.—The Secretary, acting  
6           through the Technology Transfer Coordinator ap-  
7           pointed under section 1001(a), and in consultation  
8           with the Directors, shall establish a program to pro-  
9           vide small business concerns with vouchers under  
10          paragraph (3)—

11           “(A) to achieve the goal described in sub-  
12          section (a)(1); and

13           “(B) to improve the products, services, and  
14          capabilities of small business concerns in the  
15          mission space of the Department.

16          “(3) VOUCHERS.—Under the program, the Di-  
17          rectors are authorized to provide to small business  
18          concerns vouchers to be used at National Labora-  
19          tories and single-purpose research facilities for—

20           “(A) research, development, demonstra-  
21          tion, technology transfer, or commercial appli-  
22          cation activities; or

23           “(B) any other activities that the applica-  
24          ble Director determines appropriate.

1           “(4) EXPEDITED APPROVAL.—The Secretary,  
2           working with the Directors, shall establish a stream-  
3           lined approval process for financial assistance agree-  
4           ments signed between—

5                   “(A) small business concerns selected to  
6                   receive a voucher under the program; and

7                   “(B) the National Laboratories and single-  
8                   purpose research facilities.

9           “(5) COST-SHARING REQUIREMENT.—In car-  
10          rying out the program, the Secretary shall require  
11          cost-sharing in accordance with section 988; and

12          “(6) REPORT.—In accordance with section  
13          8307(a) of the Clean Economy Jobs and Innovation  
14          Act, the Secretary shall report annually on the  
15          progress and implementation of the small business  
16          voucher program established under this section, in-  
17          cluding the number and locations of small businesses  
18          that received grants under this program.”; and

19          (4) in subsection (e) (as so redesignated), by  
20          striking “for activities under this section” and in-  
21          serting “for activities under subsection (b)” and in-  
22          serting at the end “and for activities under sub-  
23          section (c) \$25,000,000 for each of fiscal years 2021  
24          through 2025”.

1   **SEC. 8204. ENTREPRENEURIAL LEAVE PROGRAM.**

2           (a) IN GENERAL.—The Secretary shall delegate to  
3 Directors the authority to carry out an entrepreneurial  
4 leave program (referred to in this section as the “pro-  
5 gram”) to allow National Laboratory employees to take  
6 a full leave of absence from their position, with the option  
7 to return to that or a comparable position up to 3 years  
8 later, or a partial leave of absence, to advance the commer-  
9 cial application of energy and related technologies relevant  
10 to the mission of the Department.

11          (b) TERMINATION AUTHORITY.—Directors shall re-  
12 tain the authority to terminate National Laboratory em-  
13 ployees that participate in the program if such employees  
14 are found to violate terms prescribed by the National Lab-  
15 oratory at which such employee is employed.

16          (c) LICENSING.—To reduce barriers to participation  
17 in the program, the Secretary shall delegate to the Direc-  
18 tors the requirement to establish streamlined mechanisms  
19 for facilitating the licensing of technology that is the focus  
20 of National Laboratory employees who participate in the  
21 program.

22          (d) REPORT.—In accordance with section 8307(a) of  
23 this Act, the Secretary shall report annually on the utiliza-  
24 tion of this authority at national laboratories, including  
25 the number of employees who participate in this program  
26 at each national laboratory and the number of employees

1 who take a permanent leave from their positions at na-  
2 tional laboratories as a result of participating in this pro-  
3 gram.

4 (e) FEDERAL ETHICS.—Nothing in this section shall  
5 affect existing federal ethics rules applicable to federal  
6 personnel.

7 **SEC. 8205. NATIONAL LABORATORY EMPLOYEE OUTSIDE**  
8 **EMPLOYMENT AUTHORITY.**

9 (a) IN GENERAL.—The Secretary shall delegate to  
10 Directors of National Laboratories the authority to allow  
11 their employees—

12 (1) to engage in outside employment, including  
13 start-up companies based on licensing technologies  
14 developed at National Laboratories and consulting in  
15 their areas of expertise, and receive compensation  
16 from such entities; and

17 (2) to engage in outside activities related to  
18 their areas of expertise at the National Laboratory  
19 and may allow employees, in their employment ca-  
20 pacity at such outside employment, to access the  
21 National Laboratories under the same contracting  
22 mechanisms as non-laboratory employees and enti-  
23 ties, in accordance with appropriate conflict of inter-  
24 est protocols.



1 (b) REQUIREMENTS.—If a Director elects to use the  
2 authority granted by subsection (a) of this section, the Di-  
3 rector, or their designee, shall—

4 (1) require employees to disclose to and obtain  
5 approval from the Director or their designee prior to  
6 engaging in any outside employment;

7 (2) develop and require appropriate conflict of  
8 interest protocols for employees that engage in out-  
9 side employment; and

10 (3) maintain the authority to terminate employ-  
11 ees engaging in outside employment if they are  
12 found to violate terms, including conflict of interest  
13 protocols, mandated by the Director.

14 (c) ADDITIONAL RESTRICTIONS.—Employees engag-  
15 ing in outside employment may not—

16 (1) sacrifice, hamper, or impede their duties at  
17 the National Laboratory;

18 (2) engage in activities related to outside em-  
19 ployment using National Laboratory government  
20 equipment, property, or resources, unless such ac-  
21 tivities are performed under National Laboratory  
22 contracting mechanisms, such as Cooperative Re-  
23 search and Development Agreement or Strategic  
24 Partnership Projects, whereby all conflicts of inter-  
25 est requirements apply; or

1           (3) use their position at a National Laboratory  
2           to provide an unfair competitive advantage to an  
3           outside employer or start-up activity.

4           (d) FEDERAL ETHICS.—Nothing in this section shall  
5           affect existing federal ethics rules applicable to federal  
6           personnel.

7   **SEC. 8206. TECHNOLOGY COMMERCIALIZATION FUND.**

8           Section 1001(e) of the Energy Policy Act of 2005 (42  
9   U.S.C. 16391(e)) is amended to read as follows:

10          “(a) TECHNOLOGY COMMERCIALIZATION FUND.—

11               “(1) ESTABLISHMENT.—The Secretary, acting  
12               through the Technology Transfer Coordinator estab-  
13               lished in section 1001 (a) of the Energy Policy Act  
14               of 2005 (42 U.S.C. 16391(a)), shall establish a  
15               Technology Commercialization Fund (hereafter re-  
16               ferred to as the ‘Fund’), using nine-tenths of one  
17               percent of the amount of appropriations made avail-  
18               able to the Department for applied energy research,  
19               development, demonstration, and commercial appli-  
20               cation for each fiscal year, to be used to provide, in  
21               accordance with the cost-sharing requirements under  
22               section 988, funds to national laboratories to pro-  
23               mote promising energy technologies for commercial  
24               purposes with private partners.

25               “(2) APPLICATIONS.—

1           “(A) CONSIDERATIONS.—The Secretary  
2           shall develop criteria for evaluating applications  
3           for funding under this section, which may in-  
4           clude—

5                   “(i) the potential that a proposed  
6                   technology will result in a commercially  
7                   successful product within a reasonable  
8                   timeframe; and

9                   “(ii) the relative maturity of a pro-  
10                  posed technology for commercial applica-  
11                  tion.

12           “(B) SELECTIONS.—In awarding funds  
13           under this section, the Secretary may give spe-  
14           cial consideration to applications that involve at  
15           least one applicant that has participated in an  
16           entrepreneurial or commercialization training  
17           program, such as Energy Innovation Corps.

18           “(3) ANNUAL REPORT.—The Secretary shall in-  
19           clude in the annual report required under subsection  
20           (h)(2)—

21                   “(A) description of the projects carried out  
22                   with awards from the Fund for that fiscal year;

23                   “(B) each project’s cost-share for that fis-  
24                   cal year;

1                   “(C) each project’s partners for that fiscal  
2                   year.

3                   “(4) EVALUATION.—In accordance with section  
4                   8307(b) of the Clean Economy Jobs and Innovation  
5                   Act, the Secretary shall submit 3 years after the en-  
6                   actment of that Act and every 3 years thereafter to  
7                   the Committee on Science, Space, and Technology  
8                   Committee of the House of Representatives and the  
9                   Committee on Energy and Natural Resources of the  
10                  Senate an evaluation on the long-term commercial  
11                  success of projects that received awards from the  
12                  Fund.

13                  “(5) TECHNOLOGY COMMERCIALIZATION FUND  
14                  REPORT.—

15                  “(A) IN GENERAL.—Not later than 1 year  
16                  after the date of enactment of the Energizing  
17                  Technology Transfer Act, the Secretary shall  
18                  submit to the Committee on Science, Space,  
19                  and Technology and Committee on Appropria-  
20                  tions of the House of Representatives and the  
21                  Committee on Energy and Natural Resources  
22                  and Committee on Appropriations of the Senate  
23                  a report on the current and recommended im-  
24                  plementation of the Fund.

1                   “(B) CONTENTS.—The report under sub-  
2                   paragraph (A) shall include—

3                   “(i) a summary, with supporting data,  
4                   of how much Department program offices  
5                   contribute to and use the Fund each year,  
6                   including a list of current funding restric-  
7                   tions;

8                   “(ii) recommendations on how to im-  
9                   prove implementation and administration  
10                  of the Fund; and

11                  “(iii) an analysis on how to spend  
12                  funds optimally on technology areas that  
13                  have the greatest need and opportunity for  
14                  commercial application, rather than spend-  
15                  ing funds at the programmatic level or  
16                  under current funding restrictions.”.

17 **SEC. 8207. SIGNATURE AUTHORITY.**

18           (a) IN GENERAL.—Subject to subsections (b) and (c),  
19 the Secretary shall delegate to Directors of the National  
20 Laboratories signature authority with respect to any  
21 agreement described in subsection (b) the total cost of  
22 which, including the National Laboratory contributions  
23 and project recipient cost share, is less than \$1,000,000,  
24 if such an agreement falls within the scope of—

1           (1) the strategic plan for the National Labora-  
2           tory or a master scope of work that has been ap-  
3           proved by the Department; or

4           (2) the most recent budget approved by Con-  
5           gress for Department activities to be carried out by  
6           the National Laboratory.

7           (b) AGREEMENTS.—Subsection (a) applies to—

8           (1) a cooperative research and development  
9           agreement;

10          (2) a strategic partnership project;

11          (3) prize competitions;

12          (4) an agreement for commercializing tech-  
13          nology; or

14          (5) any other agreement determined to be ap-  
15          propriate by the Secretary, in collaboration with the  
16          Directors.

17          (c) ADMINISTRATION.—

18          (1) ACCOUNTABILITY.—The Director of the af-  
19          fected National Laboratory and the affected con-  
20          tractor shall carry out an agreement under this sec-  
21          tion in accordance with applicable policies of the De-  
22          partment, including by ensuring that the agreement  
23          does not compromise any national security, eco-  
24          nomic, or environmental interest of the United  
25          States.

1       (2) CERTIFICATION.—The Director of the affected  
2 National Laboratory and the affected contractor shall cer-  
3 tify that each activity carried out under a project for  
4 which an agreement is entered into under this section does  
5 not present, or minimizes, any apparent conflict of inter-  
6 est, and avoids or neutralizes any actual conflict of inter-  
7 est, as a result of the agreement under this section.

8       (3) AVAILABILITY OF RECORDS.—Not later than 30  
9 days after the date on which a Director enters an agree-  
10 ment under this section, such Director shall submit to the  
11 Secretary for monitoring and review all records of the Na-  
12 tional Laboratory relating to the agreement.

13       (d) APPROVAL.—Upon granting the signature au-  
14 thority under subsection (a), the Secretary may not re-  
15 quire any additional reviews or approvals of draft agree-  
16 ments, statements of work, or other documents for agree-  
17 ments that meet the criteria under subsection (a).

18       (e) EXCEPTION.—This section does not apply to any  
19 agreement with a foreign-controlled entity or entity under  
20 the majority control of any foreign entity.

21       (f) REPORT.—In accordance with section 8307(a) of  
22 this Act, the Secretary shall submit annually information  
23 on the number and types of agreements signed using the  
24 authorities granted under this section.

1 (g) EVALUATION.—Not later than 3 years after the  
2 date of enactment of this Act, the Secretary shall submit  
3 to the Committee on Science, Space, and Technology Com-  
4 mittee of the House of Representatives and the Committee  
5 on Energy and Natural Resources of the Senate an evalua-  
6 tion of the efficacy of reducing administrative burden for  
7 agreements signed using the authorities granted under  
8 this section.

9 (h) CONFORMING AMENDMENT.—Section 12 of the  
10 Stevenson-Wydler Technology Innovation Act of 1980 (15  
11 U.S.C. 3710a) is amended—

12 (1) in subsection (a)—

13 (A) by redesignating paragraphs (1) and  
14 (2) as subparagraphs (A) and (B), respectively,  
15 and indenting the subparagraphs appropriately;

16 (B) by striking “Each Federal agency”  
17 and inserting the following:

18 “(1) IN GENERAL.—Except as provided in para-  
19 graph (2), each Federal agency”; and

20 (C) by adding at the end the following:

21 “(2) EXCEPTION.—Notwithstanding paragraph  
22 (1), in accordance with section 8207 of the Clean  
23 Economy Jobs and Innovation Act, approval by the  
24 Secretary of Energy shall not be required for any  
25 agreement proposed to be entered into by a National



1 Laboratory of the Department of Energy, the total  
2 cost of which, including the National Laboratory  
3 contributions and project recipient cost share, is less  
4 than \$1,000,000.”; and

5 (2) in subsection (b), by striking “subsection  
6 (a)(1)” each place it appears and inserting “sub-  
7 section (a)(1)(A)”.

## 8 **Subtitle C—Department of Energy** 9 **Modernization**

### 10 **SEC. 8301. TECHNOLOGY TRANSFER PROGRAM.**

11 (a) CHIEF COMMERCIALIZATION OFFICER.—Section  
12 1001 of the Energy Policy Act of 2005 (42 U.S.C. 16391)  
13 is amended—

14 (1) by amending subsection (a) to read as fol-  
15 lows:

16 “(a) CHIEF COMMERCIALIZATION OFFICER.—The  
17 Secretary shall appoint a Chief Commercialization Officer  
18 to be the principal advisor to the Secretary on all matters  
19 relating to technology transfer and commercialization, and  
20 who shall report directly to, and be appointed by, the Sec-  
21 retary.”; and

22 (2) in subsections (b) and (c), by striking “Co-  
23 ordinator” each place it appears and inserting  
24 “Chief Commercialization Officer”.

1 (b) OFFICE OF TECHNOLOGY TRANSITIONS.—Title X  
2 of the Energy Policy Act of 2005 (42 U.S.C. 16391 et.  
3 seq.) is amended by adding at the end the following:

4 **“SEC. 1012. TECHNOLOGY TRANSFER PROGRAM.**

5 “(a) OFFICE OF TECHNOLOGY TRANSITIONS.—There  
6 is established within the Department an Office of Tech-  
7 nology Transitions (referred to in this section as the ‘Of-  
8 fice’), which shall be headed by the Chief Commercializa-  
9 tion Officer appointed under section 1001(a).

10 “(b) MISSION.—The mission of the Office shall be—

11 “(1) to expand the commercial impact of the re-  
12 search investments of the Department; and

13 “(2) to advance the commercial application of  
14 technologies that reduce energy use, reduce green-  
15 house gas emissions and other pollutants, improve  
16 energy efficiency, mitigate other negative environ-  
17 mental consequences, or support other missions of  
18 the Department.

19 “(c) GOALS.—

20 “(1) IN GENERAL.—In carrying out the mission  
21 and activities of the Office, the Chief Commercializa-  
22 tion Officer shall, with respect to commercial appli-  
23 cation activities, meet all of the goals described in  
24 paragraph (2).

1           “(2) GOALS DESCRIBED.—The goals referred to  
2           in paragraph (1) are the following:

3                   “(A) Reduction of greenhouse gas emis-  
4                   sions or other pollutants.

5                   “(B) Improvement of energy efficiency.

6                   “(C) Improvement of economic competi-  
7                   tiveness.

8                   “(D) Enhancement of domestic energy se-  
9                   curity and national security.

10                  “(E) Enhancement of the domestic work-  
11                  force relevant to energy and other sectors rel-  
12                  evant to the mission of the Department.

13           “(d) HIRING AND MANAGEMENT.—To carry out the  
14           program authorized in this section, the Under Secretary  
15           for Science may appoint personnel using the authorities  
16           in section 8306 of the Clean Economy Jobs and Innova-  
17           tion Act.

18           “(e) COLLABORATION.—In carrying out the mission  
19           and activities of the program, the Chief Commercialization  
20           Officer shall coordinate with the senior leadership of the  
21           Department, other relevant offices of the Department, the  
22           Directors, the National Laboratories, the Technology  
23           Transfer Working Group established under section  
24           1001(d), the Technology Transfer Policy Board, and other  
25           stakeholders, including private industry.

1       “(f) REPORT.—In accordance with section 8307(a) of  
2 the Clean Economy Jobs and Innovation Act, the Sec-  
3 retary shall report annually on the activities carried out  
4 by this program pertaining to the mission of the program  
5 in subsection (b) and the goals in subsection (c).

6       “(g) AUTHORIZATION OF APPROPRIATIONS.—There  
7 are authorized to be appropriated to the Secretary to carry  
8 out the activities authorized in this section \$20,000,000  
9 for each of fiscal years 2021 through 2025.”.

10 **SEC. 8302. MANAGEMENT OF DEMONSTRATION PROJECTS.**

11       (a) MANAGEMENT OF DEPARTMENT OF ENERGY  
12 DEMONSTRATION PROJECTS.—The Secretary shall estab-  
13 lish a program to conduct project management and over-  
14 sight of demonstration projects that receive more than  
15 \$50,000,000 in funding from the Department, in coordi-  
16 nation with relevant staff from Department program of-  
17 fices. The purposes of this program are to—

18               (1) conduct evaluation of demonstration project  
19 proposals prior to selection of a project for funding;

20               (2) conduct independent oversight of the execu-  
21 tion of a demonstration project once funding has  
22 been awarded for such project; and

23               (3) ensure a balanced portfolio of investments  
24 in clean energy technology demonstration projects.

1 (b) DEMONSTRATION PROJECT MANAGEMENT EM-  
2 PLOYEES.—

3 (1) AUTHORITY.—In carrying out the program  
4 under subsection (a), the Under Secretary for  
5 Science shall appoint at least 2 full time employees  
6 to achieve the purposes of the program outlined in  
7 subsection (a) in coordination with relevant staff at  
8 Department program offices.

9 (2) HIRING AUTHORITY.—To carry out the pro-  
10 gram authorized in this section, the Under Secretary  
11 for Science may hire personnel using the authorities  
12 in section 8306 of this Act.

13 (c) DUTIES.—In carrying out the program in sub-  
14 section (a), employees under this section shall work with  
15 relevant staff from Department program offices to—

16 (1) evaluate demonstration project proposals,  
17 including the scope, technical specifications, matu-  
18 rity of design, funding profile, estimated costs, pro-  
19 posed schedule, proposed technical and financial  
20 milestones, and potential for commercial success  
21 based on economic and policy projections;

22 (2) develop independent cost estimates of dem-  
23 onstration project proposals, when appropriate;

1           (3) recommend to the director of a program of-  
2       fice whether to fund a demonstration project pro-  
3       posal;

4           (4) oversee the execution of the demonstration  
5       projects that receive funding from the Department  
6       under this section and conduct reviews of ongoing  
7       projects, which may include reconciling estimated  
8       costs as compared to actual costs and evaluating  
9       progress of the project based on the proposed sched-  
10      ule and technical and financial milestones, and pro-  
11      vide such reviews to the Secretary; and

12          (5) assess lessons learned and implement im-  
13      provements to evaluate and oversee demonstration  
14      projects carried out under this section.

15      (d) PROJECT TERMINATION.—Should an ongoing  
16      demonstration project receive an unfavorable review under  
17      subsection (c)(4), the director of a Department program  
18      office or their designee may cease funding the demonstra-  
19      tion project and reallocate the remaining funds to new or  
20      existing demonstration projects carried out by that pro-  
21      gram office.

22      (e) COORDINATION.—In establishing and carrying  
23      out the program, the Secretary shall coordinate with  
24      project management and acquisition management entities  
25      within the Department, including the Office of Project

1 Management, and relevant professional organizations in  
2 project management, construction, cost estimation, and  
3 other relevant fields.

4 (f) REPORTING.—In accordance with section  
5 8307(a), the Secretary shall report annually on the utiliza-  
6 tion of the authority granted under this section, including  
7 a summary of—

8 (1) any demonstration projects currently being  
9 carried out under this section; and

10 (2) a summary of the reviews under subsection  
11 (c)(4) of any ongoing demonstration projects carried  
12 out under this section.

13 (g) EVALUATION BY COMPTROLLER GENERAL.—Not  
14 later than 3 years after the date of the enactment of this  
15 Act the Comptroller General shall submit to the Com-  
16 mittee on Science, Space, and Technology of the House  
17 of Representatives and the Committee on Energy and  
18 Natural Resources of the Senate an evaluation on the op-  
19 eration of the program established under this section, in-  
20 cluding—

21 (1) the processes and procedures used to evalu-  
22 ate demonstration project proposals and oversee  
23 demonstration projects that receive funding under  
24 this section;

1           (2) any recommended changes to the program,  
2           including the structure and the processes and proce-  
3           dures used to evaluate and oversee demonstration  
4           projects that receive funding under this section; and  
5           (3) any recommended changes to the structure  
6           of this program to improve the success in meeting  
7           the program purposes under subsection (a).

8   **SEC. 8303. STREAMLINING PRIZE COMPETITIONS.**

9           Section 1008 of the Energy Policy Act of 2005 (42  
10   U.S.C. 16396) is amended by inserting after subsection  
11   (d) the following (and redesignating subsections (f) and  
12   (g) as subsections (g) and (h), respectively):

13           “(e) COORDINATION.—In carrying out subsection (a),  
14   and for any prize competitions under section 105 of the  
15   America Creating Opportunities to Meaningfully Promote  
16   Excellence in Technology, Education, and Science Reau-  
17   thorization Act of 2010, the Secretary shall—

18           “(1) designate at least one full time employee  
19           to serve as a Department-wide point of contact on  
20           prize competitions;

21           “(2) issue Department-wide guidance on the de-  
22           sign, development, and implementation of prize com-  
23           petitions;

24           “(3) collect and disseminate best practices on  
25           the design and administration of prize competitions;



1           “(4) streamline contracting mechanisms for the  
2           implementation of prize competitions; and

3           “(5) provide training and prize competition de-  
4           sign support, as necessary, to Department staff to  
5           develop prize competitions and challenges.

6           “(f) REPORT.—In accordance with section 8307(a) of  
7           the Clean Economy Jobs and Innovation Act, the Sec-  
8           retary shall report annually on a description of any prize  
9           competitions carried out using this authority, the total  
10          amount of prizes awarded along with any private sector  
11          contributions, the methods used for solicitation and eval-  
12          uation, and a description of how each prize competition  
13          advanced the mission of the Department.”.

14   **SEC. 8304. MILESTONE-BASED DEMONSTRATION PROJECTS.**

15          (a) IN GENERAL.—Acting under section 646(g) of  
16          the Department of Energy Organization Act (42 U.S.C.  
17          7256(g)), notwithstanding paragraph (10) of such section,  
18          the Secretary may carry out demonstration projects as a  
19          milestone-based demonstration project that requires par-  
20          ticular technical and financial milestones to be met before  
21          a participant is awarded grants by the Department  
22          through a competitive award process.

23          (b) REQUIREMENTS.—In carrying out milestone-  
24          based demonstration projects under the authority in sub-

1 section (a), the Secretary shall, for each relevant  
2 project,—

3 (1) request proposals from eligible entities, as  
4 determined by the Secretary, including—

5 (A) a business plan, that may include a  
6 plan for scalable manufacturing and a plan for  
7 addressing supply chain gaps;

8 (B) a plan for raising private sector invest-  
9 ment; and

10 (C) proposed technical and financial mile-  
11 stones, including estimated project timelines  
12 and total costs; and

13 (2) award funding of a predetermined amount  
14 to projects that successfully meet proposed mile-  
15 stones under paragraph (1)(C) or for expenses  
16 deemed reimbursable by the Secretary, in accordance  
17 with terms negotiated for an individual award;

18 (3) require cost-sharing in accordance with sec-  
19 tion 988 of the Energy Policy Act of 2005; and

20 (4) communicate regularly with selected eligible  
21 entities and, if the Secretary deems appropriate, ex-  
22 ercise small amounts of flexibility for technical and  
23 financial milestones as projects mature.

24 (c) AWARDS.—For the program established under  
25 subsection (a)—

1           (1) an award recipient shall be responsible for  
2       all costs until milestones are achieved, or reimburs-  
3       able expenses are reviewed and verified by the De-  
4       partment; and

5           (2) should an awardee not meet the milestones  
6       described in subsection (a), the Secretary or their  
7       designee may end the partnership with an award re-  
8       cipient and use the remaining funds in the ended  
9       agreement for new or existing projects carried out  
10      under this section.

11       (d) **PROJECT MANAGEMENT.**—In carrying out  
12   projects under this program and assessing the completion  
13   of their milestones in accordance with subsection (b), the  
14   Secretary shall consult with experts that represent diverse  
15   perspectives and professional experiences, including those  
16   from the private sector, to ensure a complete and thorough  
17   review.

18       (e) **REPORT.**—In accordance with section 8307(a),  
19   the Secretary shall report annually on any demonstration  
20   projects carried out using the authorities under this sec-  
21   tion.

22   **SEC. 8305. COST-SHARE WAIVER EXTENSION.**

23       (a) Section 988 of the Energy Policy Act of 2005 is  
24   amended in subsection (b)(4)(B) by striking “this para-

1 graph” and inserting “the Energizing Technology Trans-  
2 fer Act”; and

3 (b) Section 108 of the Department of Energy Re-  
4 search and Innovation Act is amended in subparagraph  
5 (b) by striking “this Act” everywhere it appears and re-  
6 placing with “title VIII of the Clean Economy Jobs and  
7 Innovation Act”.

8 **SEC. 8306. SPECIAL HIRING AUTHORITY FOR SCIENTIFIC,**  
9 **ENGINEERING, AND PROJECT MANAGEMENT**  
10 **PERSONNEL.**

11 (a) IN GENERAL.—The Under Secretary for Science  
12 shall have the authority to—

13 (1) make appointments of scientific, engineer-  
14 ing, and professional personnel, without regard to  
15 civil service laws, to assist the Department in meet-  
16 ing specific project or research needs;

17 (2) fix the basic pay of any employee appointed  
18 under this section at a rate to be determined by the  
19 Under Secretary at rates not in excess of the Execu-  
20 tive Schedule (EX–II) without regard to the civil  
21 service laws; and

22 (3) pay any employee appointed under this sec-  
23 tion payments in addition to basic pay, except that  
24 the total amount of additional payments paid to an  
25 employee under this subsection for any 12-month pe-

1        riod shall not exceed the lesser of the following  
2        amounts:

3                    (A) \$25,000.

4                    (B) The amount equal to 25 percent of the  
5        annual rate of basic pay of that employee.

6                    (C) The amount of the limitation that is  
7        applicable for a calendar year under section  
8        5307(a)(1) of title 5, United States Code.

9        (b) TERM.—

10            (1) IN GENERAL.—The term of any employee  
11        appointed under this section shall not exceed 3 years  
12        unless otherwise authorized in law.

13            (2) TERMINATION.—The Under Secretary for  
14        Science shall have the authority to terminate any  
15        employee appointed under this section at any time  
16        based on performance or changing project or re-  
17        search needs of the Department.

18        **SEC. 8307. TECHNOLOGY TRANSFER REPORTS AND EVAL-**  
19                    **UATION.**

20            (a) ANNUAL REPORT.—As part of the updated tech-  
21        nology transfer execution plan required each year under  
22        section 1001(h)(2) of the Energy Policy Act of 2005 (42  
23        U.S.C. 16391(g)(2)), the Secretary shall submit to the  
24        Committee on Science, Space, and Technology Committee  
25        of the House of Representatives and the Committee on

1 Energy and Natural Resources of the Senate a report on  
2 the progress and implementation of programs established  
3 under sections 8103, 8203, 8204, 8205, 8207, 8301,  
4 8302, 8303, and 8304 of this Act and section 1001(e) of  
5 the Energy Policy Act of 2005 (42 U.S.C. 16391(e)).

6 (b) EVALUATION.—Not later than 3 years after the  
7 enactment of this Act and every 3 years thereafter the  
8 Secretary shall submit to the Committee on Science,  
9 Space, and Technology Committee of the House of Rep-  
10 resentatives and the Committee on Energy and Natural  
11 Resources of the Senate an evaluation on the extent to  
12 which programs established under sections 8102, 8103,  
13 8104, and 8202 of this Act and section 1001(e) of the  
14 Energy Policy Act of 2005 (42 U.S.C. 16391(e)) are  
15 achieving success based on relevant short-term and long-  
16 term metrics.

17 (c) REPORT ON TECHNOLOGY TRANSFER GAPS.—  
18 Not later than 3 years after the enactment of this Act,  
19 the Secretary shall enter into an agreement with the Na-  
20 tional Academies of Science, Engineering and Medicine to  
21 submit to the Committee on Science, Space, and Tech-  
22 nology Committee of the House of Representatives and the  
23 Committee on Energy and Natural Resources of the Sen-  
24 ate a report on programmatic gaps that exist to advance

1 the commercial application of technologies developed at  
2 the National Laboratories.

3 **SEC. 8308. OTHER TRANSACTION AUTHORITY EXTENSION.**

4 Subsection 646(g)(10) of the Department of Energy  
5 Organization Act (42 U.S.C. 7256(g)(10)) is amended by  
6 striking “September 30, 2020” and inserting “September  
7 30, 2025”.

8 **TITLE IX—INDUSTRIAL INNOVA-**  
9 **TION AND COMPETITIVENESS**  
10 **Subtitle A—Smart Manufacturing**

11 **SEC. 9101. DEFINITIONS.**

12 In this subtitle:

13 (1) ENERGY MANAGEMENT SYSTEM.—The term  
14 “energy management system” means a business  
15 management process based on standards of the  
16 American National Standards Institute that enables  
17 an organization to follow a systematic approach in  
18 achieving continual improvement of energy perform-  
19 ance, including energy efficiency, security, use, and  
20 consumption.

21 (2) INDUSTRIAL ASSESSMENT CENTER.—The  
22 term “industrial assessment center” means a center  
23 located at an institution of higher education that—

24 (A) receives funding from the Department  
25 of Energy;

1 (B) provides an in-depth assessment of  
2 small- and medium-sized manufacturer plant  
3 sites to evaluate the facilities, services, and  
4 manufacturing operations of the plant site; and

5 (C) identifies opportunities for potential  
6 savings for small- and medium-sized manufac-  
7 turer plant sites from energy efficiency improve-  
8 ments, waste minimization, pollution preven-  
9 tion, and productivity improvement.

10 (3) INFORMATION AND COMMUNICATION TECH-  
11 NOLOGY.—The term “information and communica-  
12 tion technology” means any electronic system or  
13 equipment (including the content contained in the  
14 system or equipment) used to create, convert, com-  
15 municate, or duplicate data or information, including  
16 computer hardware, firmware, software, communica-  
17 tion protocols, networks, and data interfaces.

18 (4) INSTITUTION OF HIGHER EDUCATION.—The  
19 term “institution of higher education” has the  
20 meaning given the term in section 101(a) of the  
21 Higher Education Act of 1965 (20 U.S.C. 1001(a)).

22 (5) NATIONAL LABORATORY.—The term “Na-  
23 tional Laboratory” has the meaning given the term  
24 in section 2 of the Energy Policy Act of 2005 (42  
25 U.S.C. 15801).



1           (6) NORTH AMERICAN INDUSTRY CLASSIFICA-  
2           TION SYSTEM.—The term “North American Indus-  
3           try Classification System” means the standard used  
4           by Federal statistical agencies in classifying business  
5           establishments for the purpose of collecting, ana-  
6           lyzing, and publishing statistical data relating to the  
7           business economy of the United States.

8           (7) SECRETARY.—The term “Secretary” means  
9           the Secretary of Energy.

10          (8) SMALL AND MEDIUM MANUFACTURERS.—  
11          The term “small and medium manufacturers”  
12          means manufacturing firms—

13                (A) classified in the North American In-  
14                dustry Classification System as any of sectors  
15                31 through 33;

16                (B) with gross annual sales of less than  
17                \$100,000,000;

18                (C) with fewer than 500 employees at the  
19                plant site; and

20                (D) with annual energy bills totaling more  
21                than \$100,000 and less than \$2,500,000.

22          (9) SMART MANUFACTURING.—The term  
23          “smart manufacturing” means advanced tech-  
24          nologies in information, automation, monitoring,

1       computation, sensing, modeling, and networking  
2       that—

3               (A) digitally—

4                   (i) simulate manufacturing production  
5                   lines;

6                   (ii) operate computer-controlled man-  
7                   ufacturing equipment;

8                   (iii) monitor and communicate pro-  
9                   duction line status; and

10                  (iv) manage and optimize energy pro-  
11                  ductivity and cost throughout production;

12               (B) model, simulate, and optimize the en-  
13               ergy efficiency of a factory building;

14               (C) monitor and optimize building energy  
15               performance;

16               (D) model, simulate, and optimize the de-  
17               sign of energy efficient and sustainable prod-  
18               ucts, including the use of digital prototyping  
19               and additive manufacturing to enhance product  
20               design;

21               (E) connect manufactured products in net-  
22               works to monitor and optimize the performance  
23               of the networks, including automated network  
24               operations; and

1 (F) digitally connect the supply chain net-  
2 work.

3 **SEC. 9102. DEVELOPMENT OF NATIONAL SMART MANUFAC-**  
4 **TURING PLAN.**

5 (a) IN GENERAL.—Not later than 3 years after the  
6 date of enactment of this Act, the Secretary, in consulta-  
7 tion with the National Academies, shall develop and com-  
8 plete a national plan for smart manufacturing technology  
9 development and deployment to improve the productivity  
10 and energy efficiency of the manufacturing sector of the  
11 United States.

12 (b) CONTENT.—

13 (1) IN GENERAL.—The plan developed under  
14 subsection (a) shall identify areas in which agency  
15 actions by the Secretary and other heads of relevant  
16 Federal agencies would—

17 (A) facilitate quicker development, deploy-  
18 ment, and adoption of smart manufacturing  
19 technologies and processes;

20 (B) result in greater energy efficiency and  
21 lower environmental impacts for all American  
22 manufacturers; and

23 (C) enhance competitiveness and strength-  
24 en the manufacturing sectors of the United  
25 States.

1           (2) INCLUSIONS.—Agency actions identified  
2           under paragraph (1) shall include—

3                   (A) an assessment of previous and current  
4                   actions of the Department of Energy relating to  
5                   smart manufacturing;

6                   (B) the establishment of voluntary inter-  
7                   connection protocols and performance stand-  
8                   ards;

9                   (C) use of smart manufacturing to improve  
10                  energy efficiency and reduce emissions in sup-  
11                  ply chains across multiple companies;

12                  (D) actions to increase cybersecurity in  
13                  smart manufacturing infrastructure;

14                  (E) deployment of existing research re-  
15                  sults; and

16                  (F) the leveraging of existing high-per-  
17                  formance computing infrastructure.

18       (c) BIENNIAL REVISIONS.—Not later than 2 years  
19       after the date on which the Secretary completes the plan  
20       under subsection (a), and not less frequently than once  
21       every 2 years thereafter, the Secretary shall revise the  
22       plan to account for advancements in information and com-  
23       munication technology and manufacturing needs.

24       (d) REPORT.—Annually until the completion of the  
25       plan under subsection (a), the Secretary shall submit to

1 Congress a report on the progress made in developing the  
2 plan.

3 **SEC. 9103. LEVERAGING EXISTING AGENCY PROGRAMS TO**  
4 **ASSIST SMALL AND MEDIUM MANUFACTUR-**  
5 **ERS.**

6 (a) FINDINGS.—Congress finds that—

7 (1) the Department of Energy has existing  
8 technical assistance programs that facilitate greater  
9 economic growth through outreach to and engage-  
10 ment with small and medium manufacturers;

11 (2) those technical assistance programs rep-  
12 resent an important conduit for increasing the  
13 awareness of and providing education to small and  
14 medium manufacturers regarding the opportunities  
15 for implementing smart manufacturing; and

16 (3) those technical assistance programs help fa-  
17 cilitate the implementation of best practices.

18 (b) EXPANSION OF TECHNICAL ASSISTANCE PRO-  
19 GRAMS.—The Secretary shall expand the scope of tech-  
20 nologies covered by the Industrial Assessment Centers of  
21 the Department of Energy—

22 (1) to include smart manufacturing technologies  
23 and practices; and

24 (2) to equip the directors of the Industrial As-  
25 sessment Centers with the training and tools nec-

1       essary to provide technical assistance in smart man-  
2       ufacturing technologies and practices, including en-  
3       ergy management systems, to manufacturers.

4   **SEC. 9104. LEVERAGING SMART MANUFACTURING INFRA-**  
5       **STRUCTURE AT NATIONAL LABORATORIES.**

6       (a) STUDY.—

7           (1) IN GENERAL.—Not later than 180 days  
8       after the date of enactment of this Act, the Sec-  
9       retary shall conduct a study on how the Department  
10      of Energy can increase access to existing high-per-  
11      formance computing resources in the National Lab-  
12      oratories, particularly for small and medium manu-  
13      facturers.

14          (2) INCLUSIONS.—In identifying ways to in-  
15      crease access to National Laboratories under para-  
16      graph (1), the Secretary shall—

17           (A) focus on increasing access to the com-  
18      puting facilities of the National Laboratories;  
19      and

20           (B) ensure that—

21                  (i) the information from the manufac-  
22      turer is protected; and

23                  (ii) the security of the National Lab-  
24      oratory facility is maintained.

1           (3) REPORT.—Not later than 1 year after the  
2       date of enactment of this Act, the Secretary shall  
3       submit to Congress a report describing the results of  
4       the study.

5       (b) ACTIONS FOR INCREASED ACCESS.—The Sec-  
6       retary shall facilitate access to the National Laboratories  
7       studied under subsection (a) for small and medium manu-  
8       facturers so that small and medium manufacturers can  
9       fully use the high-performance computing resources of the  
10      National Laboratories to enhance the manufacturing com-  
11      petitiveness of the United States.

12   **SEC. 9105. STATE LEADERSHIP GRANTS.**

13      (a) FINDING.—Congress finds that the States—

14          (1) are committed to promoting domestic manu-  
15      facturing and supporting robust economic develop-  
16      ment activities; and

17          (2) are uniquely positioned to assist manufac-  
18      turers, particularly small and medium manufactur-  
19      ers, with deployment of smart manufacturing  
20      through the provision of infrastructure, including—

21              (A) access to shared supercomputing facili-  
22      ties;

23              (B) assistance in developing process sim-  
24      ulations; and

1 (C) conducting demonstrations of the bene-  
2 fits of smart manufacturing.

3 (b) GRANTS AUTHORIZED.—The Secretary may  
4 make grants on a competitive basis to States for estab-  
5 lishing State programs to be used as models for sup-  
6 porting the implementation of smart manufacturing tech-  
7 nologies.

8 (c) APPLICATION.—

9 (1) IN GENERAL.—To be eligible to receive a  
10 grant under this section, a State shall submit to the  
11 Secretary an application at such time, in such man-  
12 ner, and containing such information as the Sec-  
13 retary may require.

14 (2) CRITERIA.—The Secretary shall evaluate an  
15 application for a grant under this section on the  
16 basis of merit using criteria identified by the Sec-  
17 retary, including—

18 (A) the breadth of academic and private  
19 sector partners;

20 (B) alternate sources of funding;

21 (C) plans for dissemination of results; and

22 (D) the permanence of the infrastructure  
23 to be put in place by the project.

24 (d) REQUIREMENTS.—



1           (1) TERM.—The term of a grant under this  
2           section shall not exceed 3 years.

3           (2) MAXIMUM AMOUNT.—The amount of a  
4           grant under this section shall be not more than  
5           \$3,000,000.

6           (3) MATCHING REQUIREMENT.—Each State  
7           that receives a grant under this section shall con-  
8           tribute matching funds in an amount equal to not  
9           less than 30 percent of the amount of the grant.

10          (e) USE OF FUNDS.—A State shall use a grant pro-  
11          vided under this section—

12               (1) to provide access to shared supercomputing  
13               facilities to small and medium manufacturers;

14               (2) to fund research and development of trans-  
15               formational manufacturing processes and materials  
16               technology that advance smart manufacturing; and

17               (3) to provide tools and training to small and  
18               medium manufacturers on how to adopt energy  
19               management systems and implement smart manu-  
20               facturing technologies in the facilities of the small  
21               and medium manufacturers.

22          (f) EVALUATION.—The Secretary shall conduct bian-  
23          nual evaluations of each grant made under this section—

24               (1) to determine the impact and effectiveness of  
25               programs funded with the grant; and

1 (2) to provide guidance to States on ways to  
2 better execute the program of the State.

3 (g) FUNDING.—There is authorized to be appro-  
4 priated to the Secretary to carry out this section  
5 \$10,000,000 for each of fiscal years 2021 through 2025.

6 **SEC. 9106. REPORT.**

7 The Secretary annually shall submit to Congress and  
8 make publicly available a report on the progress made in  
9 advancing smart manufacturing in the United States.

10 **Subtitle B—American Innovation**  
11 **and Manufacturing Leadership**

12 **SEC. 9201. DEFINITIONS.**

13 In this subtitle:

14 (1) ADMINISTRATOR.—The term “Adminis-  
15 trator” means the Administrator of the Environ-  
16 mental Protection Agency.

17 (2) ALLOWANCE.—The term “allowance”  
18 means a limited authorization for the production or  
19 the consumption, as applicable, of a regulated sub-  
20 stance in accordance with this subtitle.

21 (3) CONSUMPTION.—The term “consumption”  
22 means, with respect to any regulated substance, the  
23 amount of that regulated substance produced in the  
24 United States, plus the amount imported, minus the  
25 amount exported.

1           (4) CONSUMPTION BASELINE.—The term “con-  
2       sumption baseline” means the baseline established  
3       for consumption of regulated substances under sec-  
4       tion 9204(a)(2).

5           (5) DESTROY.—The term “destroy” means de-  
6       struction by process or technology as approved by  
7       regulation by the Administrator.

8           (6) EXCHANGE VALUE.—The term “exchange  
9       value” means, for each regulated substance and each  
10      substance referenced in paragraph (1)(B), (1)(C),  
11      (2)(B), or (2)(C) of section 9204(a), the value by  
12      which the mass of such substance shall be multiplied  
13      for purposes of calculations under section 9204.

14          (7) EXPORT.—The term “export” means the  
15      transport of a regulated substance from any place  
16      subject to the jurisdiction of the United States to  
17      any place not subject to the jurisdiction of the  
18      United States.

19          (8) IMPORT.—The term “import” means to  
20      land on, bring into, or introduce into, or attempt to  
21      land on, bring into, or introduce into, any place sub-  
22      ject to the jurisdiction of the United States, whether  
23      or not such landing, bringing, or introduction con-  
24      stitutes an importation within the meaning of the  
25      customs laws of the United States.

1           (9) PERSON.—The term “person” has the  
2           meaning given to such term in section 302 of the  
3           Clean Air Act (42 U.S.C. 7602).

4           (10) PRODUCE, PRODUCED, AND PRODUCTION.—The terms “produce”, “produced”, and  
5           “production” refer to the manufacture in the United  
6           States of a regulated substance from any raw material or feedstock chemical, but such terms do not include—  
7  
8  
9

10                   (A) the manufacture of a regulated substance that is used and entirely consumed (except for trace quantities) in the manufacture of  
11  
12                   other chemicals;

13  
14                   (B) the reuse or recycling of a regulated  
15                   substance; or

16                   (C) amounts that are destroyed.

17           (11) PRODUCTION BASELINE.—The term “production baseline” means the baseline established for  
18           production of regulated substances under section  
19           9204(a)(1).  
20

21           (12) RECLAIM, RECLAIMED, AND RECLAIMING.—The terms “reclaim”, “reclaimed”, and “reclaiming” mean the reprocessing of a recovered regulated substance to, at a minimum, the purity specified by and verified in accordance with the Air-Con-  
22  
23  
24  
25

1        ditioning, Heating, and Refrigeration Institute  
2        (AHRI) Standard 700–2016 (or an appropriate suc-  
3        cessor standard adopted by the Administrator).

4            (13) RECOVER AND RECOVERED.—The terms  
5        “recover” and “recovered” mean the removal of a  
6        regulated substance in any condition from equipment  
7        and the storage of such regulated substance in an  
8        external container without necessarily testing or  
9        processing such regulated substance in any way.

10           (14) REGULATED SUBSTANCE.—The term “reg-  
11        ulated substance” means a substance on the list  
12        published pursuant to section 9202.

13           (15) UNITED STATES.—The term “United  
14        States” means any place subject to the jurisdiction  
15        of the United States.

16   **SEC. 9202. LISTING OF REGULATED SUBSTANCES.**

17        (a) LIST OF REGULATED SUBSTANCES.—The Ad-  
18        ministrator shall maintain a list of regulated substances,  
19        listed by chemical name and common name. The Adminis-  
20        trator shall publish such list and each update thereto in  
21        the Federal Register. Not later than 180 days after the  
22        date of enactment of this Act, the Administrator shall es-  
23        tablish the initial such list. The initial list under this sub-  
24        section shall contain the following:

**Table 1**

<b>Chemical Name</b>	<b>Common Name</b>	<b>Exchange Value</b>
CHF <sub>2</sub> CHF <sub>2</sub>	HFC-134	1100
CH <sub>2</sub> FCF <sub>3</sub>	HFC-134a	1430
CH <sub>2</sub> FCHF <sub>2</sub>	HFC143	353
CHF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub>	HFC-245fa	1030
CF <sub>3</sub> CH <sub>2</sub> CF <sub>2</sub> CH <sub>3</sub>	HFC-365mfe	794
CF <sub>3</sub> CHF <sub>2</sub> CF <sub>3</sub>	HFC-227ea	3220
CH <sub>2</sub> FCF <sub>2</sub> CF <sub>3</sub>	HFC-236eb	1340
CHF <sub>2</sub> CHF <sub>2</sub> CF <sub>3</sub>	HFC-236ea	1370
CF <sub>3</sub> CH <sub>2</sub> CF <sub>3</sub>	HFC-236fa	9810
CH <sub>2</sub> FCF <sub>2</sub> CHF <sub>2</sub>	HFC-245ea	693
CF <sub>3</sub> CHFCH <sub>2</sub> CF <sub>2</sub> CF <sub>3</sub>	HFC-43–10mee	1640
CH <sub>2</sub> F <sub>2</sub>	HFC-32	675
CHF <sub>2</sub> CF <sub>3</sub>	HFC-125	3500
CH <sub>3</sub> CF <sub>3</sub>	HFC-143a	4470
CH <sub>3</sub> F	HFC-41	92
CH <sub>2</sub> FCH <sub>2</sub> F	HFC-152	53
CH <sub>3</sub> CHF <sub>2</sub>	HFC-152a	124
CHF <sub>3</sub>	HFC-23	14800

1 (b) REQUIREMENTS.—The list required under sub-  
2 section (a) shall include the exchange value of each regu-  
3 lated substance, as set forth in table 1 of this section or,  
4 for additional regulated substances listed pursuant to sub-  
5 section (c), as determined by the Administrator pursuant  
6 to the requirements of that subsection.

7 (c) ADDITIONAL REGULATED SUBSTANCES.—The  
8 Administrator may, by regulation, add a substance to the  
9 list published under subsection (a) if such substance—

1 (1) is a saturated hydrofluorocarbon; and

2 (2) has an exchange value, as determined by  
3 the Administrator on the basis of widely used or  
4 commonly accepted credible current scientific infor-  
5 mation relating to infrared absorption and kinetic  
6 rate constants, of not less than 53.

7 (d) SAVINGS PROVISION.—Nothing in this section au-  
8 thorizes the Administrator to add to the list under sub-  
9 section (a), for purposes of phasing down production or  
10 consumption under section 9204, a blend of substances.  
11 The preceding sentence does not affect the authority of  
12 the Administrator to regulate a regulated substance within  
13 a blend of substances.

14 **SEC. 9203. MONITORING AND REPORTING REQUIREMENTS.**

15 (a) REPORTS.—

16 (1) IN GENERAL.—On a periodic basis to be de-  
17 termined by the Administrator, but which shall be  
18 not less than annually, each person who produced,  
19 imported, exported, reclaimed, destroyed, used and  
20 entirely consumed (except for trace quantities) in  
21 the manufacture of other chemicals, or used as a  
22 process agent a regulated substance shall submit a  
23 report to the Administrator setting forth the amount  
24 of each such substance that such person during the  
25 preceding reporting period—

- 1 (A) produced;
- 2 (B) imported;
- 3 (C) exported;
- 4 (D) reclaimed;
- 5 (E) destroyed;
- 6 (F) used and entirely consumed (except for
- 7 trace quantities) in the manufacture of other
- 8 chemicals; or
- 9 (G) used as a process agent.

10 (2) ATTESTATION.—Each report submitted  
11 under paragraph (1) shall be signed and attested by  
12 a responsible officer (as such term is used in section  
13 603(b) of the Clean Air Act (42 U.S.C. 7671b(b)).

14 (b) CESSATION OF REPORTING REQUIREMENT.—If a  
15 person subject to subsection (a)(1) permanently ceases  
16 production, importation, exportation, reclaiming, destruc-  
17 tion, use and entire consumption (except for trace quan-  
18 tities), or process agent use, of a regulated substance, such  
19 person shall—

20 (1) submit a report under such subsection for  
21 the reporting period in which such cessation occurs;

22 (2) notify the Administrator of such cessation  
23 prior to the end of such reporting period; and



1           (3) not be subject to such subsection with re-  
2       spect to such regulated substance for subsequent re-  
3       porting periods.

4       (c) BASELINE REPORTS.—

5           (1) INITIAL REPORT.—Each person reporting  
6       pursuant to subsection (a)(1) shall include in the  
7       first required such report, in addition to the infor-  
8       mation required by subsection (a)(1) to be reported  
9       for the applicable reporting period, the amount of  
10      each regulated substance, in each of calendar years  
11      2011 through 2013, produced, imported, exported,  
12      reclaimed, destroyed, used and entirely consumed  
13      (except for trace quantities) in the manufacture of  
14      other chemicals, or used as a process agent.

15          (2) ADDITIONAL SUBSTANCES.—In the case of  
16      a substance added to the list of regulated substances  
17      pursuant to section 9202(c), each person who pro-  
18      duced, imported, exported, reclaimed, destroyed,  
19      used and entirely consumed (except for trace quan-  
20      tities) in the manufacture of other chemicals, or  
21      used as a process agent, such regulated substance,  
22      shall submit to the Administrator, not later than  
23      180 days after the date on which such substance is  
24      added to the list, a report setting forth the amount  
25      of the substance that such person produced, im-

1       ported, exported, reclaimed, destroyed, used and en-  
2       tirely consumed (except for trace quantities) in the  
3       manufacture of other chemicals, or used as a process  
4       agent in—

5               (A) each of calendar years 2011 through  
6               2013; and

7               (B) the calendar year in which this Act is  
8       enacted and each subsequent calendar year, if  
9       required by the Administrator in a regulation  
10      adding a substance to the list of regulated sub-  
11      stances.

12      (d) COORDINATION.—To the extent consistent with  
13      subsections (a) through (c), the Administrator may, by  
14      regulation, allow any person subject to the requirements  
15      of subsection (a)(1) to combine and include the informa-  
16      tion required to be reported under that subsection with  
17      any other related information that the person is required  
18      to report to the Administrator.

19      (e) REGULATIONS.—The Administrator shall promul-  
20      gate regulations to implement this section. Not later than  
21      270 days after the date of enactment of this Act, the Ad-  
22      ministrator shall promulgate such initial final regulations  
23      as may be necessary pursuant to the preceding sentence.

24      **SEC. 9204. PHASEDOWN OF REGULATED SUBSTANCES.**

25      (a) BASELINES.—

1           (1) PRODUCTION BASELINE.—The baseline for  
2           the phasedown of the production of regulated sub-  
3           stances shall be the sum of—

4                   (A) the sum of the products of—

5                           (i) the average annual production in  
6                           the United States of each regulated sub-  
7                           stance during the 3-year period of calendar  
8                           years 2011, 2012, and 2013; multiplied by

9                           (ii) the respective exchange value of  
10                          each regulated substance;

11                   (B) an amount equal to 15 percent of the  
12                   sum of the products of—

13                           (i) the average production in the  
14                           United States of each  
15                           hydrochlorofluorocarbon in 1989; multi-  
16                           plied by

17                           (ii) the respective exchange value of  
18                           each such hydrochlorofluorocarbon; and

19                   (C) an amount equal to 0.42 percent of the  
20                   sum of the products of—

21                           (i) the average production in the  
22                           United States of each chlorofluorocarbon  
23                           in 1989; multiplied by

24                           (ii) the respective exchange value of  
25                           each such chlorofluorocarbon.

1           (2) CONSUMPTION BASELINE.—The baseline for  
2           the phasedown of the consumption of regulated sub-  
3           stances shall be the sum of—

4                   (A) an amount equal to the sum of the  
5           products of—

6                           (i) the average annual consumption in  
7                           the United States of each regulated sub-  
8                           stance during the 3-year period of calendar  
9                           years 2011, 2012, and 2013; multiplied by

10                           (ii) the respective exchange value of  
11                           each such regulated substance;

12                   (B) an amount equal to 15 percent of the  
13           sum of the products of—

14                           (i) the average consumption in the  
15                           United States of each  
16                           hydrochlorofluorocarbon in 1989; multi-  
17                           plied by

18                           (ii) the respective exchange value of  
19                           each such hydrochlorofluorocarbon; and

20                   (C) an amount equal to 0.42 percent of the  
21           sum of the products of—

22                           (i) the average consumption in the  
23                           United States of each chlorofluorocarbon  
24                           in 1989; multiplied by

(ii) the respective exchange value of each such chlorofluorocarbon.

(3) EXCHANGE VALUES.—For purposes of paragraphs (1) and (2), the following exchange values for hydrochlorofluorocarbons and chlorofluorocarbons respectively shall apply:

**Table 2**

Chemical Name	Common Name	Exchange Value
CHFC <sub>2</sub>	HCFC-21	151
CHF <sub>2</sub> Cl	HCFC-22	1810
C <sub>2</sub> HF <sub>3</sub> Cl <sub>2</sub>	HCFC-123	77
C <sub>2</sub> HF <sub>4</sub> Cl	HCFC-124	609
CH <sub>3</sub> CFCl <sub>2</sub>	HCFC-141b	725
CH <sub>3</sub> CF <sub>2</sub> Cl	HCFC-142b	2310
CF <sub>3</sub> CF <sub>2</sub> CHCl <sub>2</sub>	HCFC-225ea	122
CF <sub>2</sub> ClCF <sub>2</sub> CHClF	HCFC-225eb	595

**Table 3**

Chemical Name	Common Name	Exchange Value
CFCl <sub>3</sub>	CFC-11	4750
CF <sub>2</sub> Cl <sub>2</sub>	CFC-12	10900
C <sub>2</sub> F <sub>3</sub> Cl <sub>3</sub>	CFC-113	6130
C <sub>2</sub> F <sub>4</sub> Cl <sub>2</sub>	CFC-114	10000
C <sub>2</sub> F <sub>5</sub> Cl	CFC-115	7370

(b) ALLOWANCES.—

(1) FRAMEWORK REGULATIONS.—The Administrator shall, by regulation, establish an allowance allocation and trading program to phase down the production and the consumption of regulated sub-

stances in accordance with this section. Not later than 270 days after the date of enactment of this Act, the Administrator shall promulgate such final regulations as may be necessary to establish the program required by the preceding sentence.

(2) ALLOCATIONS.—Not later than October 1 of each calendar year following the promulgation of final regulations pursuant to the second sentence of paragraph (1):

(A) The Administrator shall establish a quantity of production allowances and a quantity of consumption allowances. The quantities established pursuant to this paragraph shall not exceed the applicable percentages of the production baseline and of the consumption baseline for the calendar year involved as specified in the following table 4:

**Table 4**

<b>Calendar year</b>	<b>Percentage of Production Baseline</b>	<b>Percentage of Consumption Baseline</b>
through 2023	90%	90%
2024 through 2028	60%	60%
2029 through 2033	30%	30%
2034 through 2035	20%	20%
2036 and subsequent years	15%	15%

1 (B) The Administrator shall, by regulation,  
2 allocate such production allowances and con-  
3 sumption allowances up to the quantities of  
4 such allowances established pursuant to this  
5 paragraph for the succeeding calendar year.  
6 The Administrator may, at the Administrator's  
7 discretion, so allocate allowances through a sin-  
8 gle rulemaking for multiple succeeding calendar  
9 years.

10 (3) PROHIBITION.—Effective January 1 of the  
11 calendar year immediately following the issuance of  
12 a final regulation pursuant to the second sentence of  
13 paragraph (1), it shall be unlawful for a person to  
14 do any of the following:

15 (A) Production of a regulated substance  
16 without holding a production allowance that au-  
17 thorizes such production.

18 (B) Consumption of a regulated substance  
19 without holding a consumption allowance that  
20 authorizes such consumption.

21 (C) Holding, using, or transferring any  
22 production allowance or consumption allowance  
23 allocated under this section, except in accord-  
24 ance with regulations promulgated by the Ad-  
25 ministrator pursuant to paragraphs (1) and (2).

1           (4) NATURE OF ALLOWANCES.—An allowance  
2       does not constitute a property right. Nothing in this  
3       subtitle or in any other provision of law shall be con-  
4       strued to limit the authority of the United States to  
5       terminate or limit the authorization for the produc-  
6       tion or consumption of a regulated substance, as ap-  
7       plicable, granted by the allowance.

8           (5) COMPLIANCE.—For each year listed in table  
9       4, the Administrator shall ensure that the annual  
10      quantity of production or consumption in the United  
11      States of all regulated substances does not exceed  
12      the product obtained by multiplying the production  
13      baseline or consumption baseline, as applicable, and  
14      the applicable percentage listed in table 4.

15      (c) TRANSFERS.—The regulations required by sub-  
16      section (b)(1) shall—

17           (1) utilize the exchange values for each regu-  
18      lated substance established by or pursuant to section  
19      9202;

20           (2) ensure that transfers of production allow-  
21      ances and consumption allowances will result in  
22      greater total reductions in the annual production or  
23      consumption, as applicable, of regulated substances  
24      than would occur in that year in the absence of such  
25      transfers; and



1           (3) authorize the transfer of production allow-  
2           ances or consumption allowances among two or more  
3           persons only if the transferor and transferee are  
4           subject to an enforceable and quantifiable reduction  
5           in, respectively, annual production or consumption.

6           (d) SCHEDULE.—

7           (1) IN GENERAL.—

8           (A) REGULATIONS.—Subject to paragraph  
9           (3), the Administrator may, in response to a pe-  
10          tition submitted to the Administrator in accord-  
11          ance with paragraph (2), promulgate regula-  
12          tions which establish a schedule for phasing  
13          down the production and the consumption of  
14          regulated substances that is more stringent  
15          than set forth in table 4 in subsection (b), if,  
16          based on the availability of substitutes for regu-  
17          lated substances, the Administrator determines  
18          that such more stringent schedule is prac-  
19          ticable, taking into account technological  
20          achievability, commercial demands, safety, and  
21          other relevant factors, including the quantities  
22          of regulated substances available from reclaim-  
23          ing or from prior production or prior import.

24          (B) UNIFORM APPLICATION.—In any regu-  
25          lations under subparagraph (A), the Adminis-

1           trator shall apply any more stringent phase-  
2           down schedule uniformly to the allocation of  
3           production allowances and consumption allow-  
4           ances as provided under subsection (b).

5           (2) PETITION.—

6                 (A) SUBMISSION.—Any person may peti-  
7           tion the Administrator to promulgate regula-  
8           tions under this subsection.

9                 (B) DISPOSITION.—The Administrator  
10          shall grant or deny any petition under subpara-  
11          graph (A) within 270 days after receipt of any  
12          such petition.

13                (C) DENIAL.—If the Administrator denies  
14          any such petition, the Administrator shall pub-  
15          lish in the Federal Register an explanation of  
16          why the petition was denied.

17                (D) GRANTING.—If the Administrator  
18          grants any such petition, the Administrator  
19          shall—

20                       (i) propose regulations implementing  
21                       a more stringent phasedown schedule not  
22                       later than 270 days after granting the pe-  
23                       tition; and

24                       (ii) promulgate final regulations im-  
25                       plementing a more stringent phasedown

1 schedule not later than 365 days after pro-  
2 posing such regulations.

3 (E) PUBLIC AVAILABILITY.—The Adminis-  
4 trator shall—

5 (i) submit for publication in the Fed-  
6 eral Register a notice of the availability of  
7 each petition received pursuant to this  
8 paragraph not later than 60 days after re-  
9 ceipt of such petition; and

10 (ii) shall make each such petition  
11 available in full upon request.

12 (F) REQUIRED SHOWING.—Any petition  
13 under subparagraph (A) shall include a showing  
14 by the petitioner that there are adequate data  
15 to support the petition.

16 (G) INSUFFICIENT INFORMATION.—If the  
17 Administrator determines that data are not  
18 adequate to grant or deny the petition, the Ad-  
19 ministrator shall use any authority available to  
20 the Administrator, under any applicable law, to  
21 acquire such data.

22 (3) LIMITATION.—The Administrator may not  
23 promulgate a more stringent phasedown schedule  
24 under this subsection applicable to any calendar year  
25 prior to calendar year 2024.

1 (e) ESSENTIAL USES.—

2 (1) PETITION; AUTHORIZATION.—The Adminis-  
3 trator may, by regulation, allocate to a person addi-  
4 tional production allowances or consumption allow-  
5 ances to authorize the production or consumption,  
6 respectively, beginning with calendar year 2034, for  
7 a period of up to 5 years, of a regulated substance  
8 in an amount up to 10 percent of the quantity of  
9 production or consumption of such regulated sub-  
10 stance contributed by such person to the production  
11 baseline or the consumption baseline, as applicable,  
12 if the Administrator finds, based on a petition by  
13 such person, that—

14 (A) such excess production or consumption  
15 is exclusively for an application with respect to  
16 which no substitute is available during such pe-  
17 riod, considering technological achievability,  
18 commercial demands, safety, and other relevant  
19 factors; and

20 (B) the available supply of such regulated  
21 substance, including any quantities of such reg-  
22 ulated substance available from reclaiming,  
23 prior production, or prior import, and allow-  
24 ances for such regulated substance, are insuffi-  
25 cient to accommodate such application.

1           (2) EXTENSION.—The Administrator may, by  
2           regulation, allocate additional production allowances  
3           or consumption allowances, for additional periods of  
4           up to 5 years, in an amount up to 10 percent of the  
5           quantity of production or consumption of the regu-  
6           lated substance contributed by the person involved to  
7           the production baseline or the consumption baseline,  
8           as applicable, if the Administrator finds, based on a  
9           petition by such person, that the criteria described  
10          in subparagraphs (A) and (B) of paragraph (1) con-  
11          tinue to be satisfied.

12          (3) EXCEPTION.—The Administrator may allo-  
13          cate production allowances or consumption allow-  
14          ances pursuant to this subsection in amounts that  
15          cause the total quantity of production allowances or  
16          consumption allowances in a year to exceed the max-  
17          imum quantity permissible under subsection (b) for  
18          that year.

19          (f) EXPORTS.—

20                (1) EXPORTS OF EXCESS AMOUNTS.—

21                    (A) IN GENERAL.—Subject to subpara-  
22                    graphs (B) and (C) and paragraph (2), the Ad-  
23                    ministrator may, by regulation, issue additional  
24                    production allowances for renewable periods of  
25                    up to 5 years to a person to produce a regu-

1           lated substance at a facility located in the  
2           United States in excess of the amount author-  
3           ized by the production allowances otherwise  
4           held by that person solely for export to, and use  
5           in, a foreign country.

6                   (B) PETITION REQUIRED.—Prior to  
7           issuing any additional production allowances to  
8           a person pursuant to subparagraph (A), the  
9           Administrator shall require the person to sub-  
10          mit a petition in such manner and containing  
11          such information as the Administration may by  
12          regulation require.

13                   (C) LIMITATION.—The Administrator shall  
14          not issue any production allowances pursuant to  
15          subparagraph (A) in amounts that would cause  
16          the total quantity of production allowances in a  
17          year to exceed the maximum quantity of pro-  
18          duction allowances permissible under subsection  
19          (b) for that year.

20                   (2) PROHIBITED EXPORT FOR CERTAIN COUN-  
21          TRIES.—Beginning on January 1, 2033, no person  
22          subject to the requirements of this subtitle shall ex-  
23          port a regulated substance to a foreign country that  
24          is not identified by the Administrator as having en-  
25          acted or otherwise established the same or similar

1 requirements or otherwise undertaken commitments  
2 regarding the production and the consumption of  
3 regulated substances as are contained in this sub-  
4 title.

5 **SEC. 9205. MANAGEMENT OF REGULATED SUBSTANCES.**

6 (a) SENSE OF CONGRESS.—It is the sense of Con-  
7 gress that the Administrator should provide for a safe  
8 hydrofluorocarbon transition by ensuring that heating,  
9 ventilation, air conditioning, and refrigeration practi-  
10 tioners are positioned to comply with safe servicing, re-  
11 pair, disposal, or installation procedures.

12 (b) REGULATIONS.—

13 (1) IN GENERAL.—Not later than 24 months  
14 after the date of enactment of this Act, the Adminis-  
15 trator shall, for purposes of maximizing reclaiming,  
16 minimizing the release of a regulated substance from  
17 equipment, and ensuring the safety of technicians  
18 and consumers, promulgate regulations to control,  
19 where appropriate, any practice, process, or activity  
20 regarding the servicing, repair, disposal, or installa-  
21 tion of equipment that involves a regulated sub-  
22 stance or a substitute for a regulated substance, in-  
23 cluding the reclaiming of a regulated substance or a  
24 substitute for a regulated substance.

1           (2) MINIMUM STANDARDS.—The regulations  
2       promulgated under paragraph (1) may include,  
3       where appropriate, that any such servicing, repair,  
4       disposal, or installation be performed by a trained  
5       technician meeting minimum standards, as deter-  
6       mined by the Administrator.

7       (c) RECLAIM.—

8           (1) CONSIDERATION.—The Administrator shall  
9       consider the use of any authority available to the  
10      Administrator under this subtitle to increase oppor-  
11      tunities for the reclaiming of regulated substances.

12          (2) REQUIREMENT.—Any regulated substance  
13      that is recovered shall be reclaimed before such reg-  
14      ulated substance is sold or transferred to a new  
15      owner, except where such recovered regulated sub-  
16      stance is sold or transferred to a new owner solely  
17      for the purposes of being reclaimed or destroyed.

18      (d) COORDINATION.—In promulgating regulations to  
19      implement this section, the Administrator may coordinate  
20      such regulations with any other regulations promulgated  
21      by the Administrator that involve—

22          (1) the same or similar practice, process, or ac-  
23      tivity regarding the servicing, repair, disposal, or in-  
24      stallation of equipment; or

25          (2) reclaiming.



1 (e) INAPPLICABILITY.—Subsections (a) through (d)  
2 do not apply with respect to a regulated substance or a  
3 substitute for a regulated substance that is contained in  
4 a foam.

5 **SEC. 9206. TECHNOLOGY TRANSITIONS.**

6 (a) AUTHORITY.—The Administrator may, by regula-  
7 tion and in accordance with this section, prohibit or re-  
8 strict, including through a graduated schedule, the use of  
9 a regulated substance in a sector or subsector in which  
10 such regulated substance is used.

11 (b) NEGOTIATED RULEMAKING.—The Administrator  
12 shall consider negotiating and developing a proposed regu-  
13 lation under this section in accordance with the negotiated  
14 rulemaking procedure under subchapter III of chapter 5  
15 of title 5, United States Code (commonly referred to as  
16 the “Negotiated Rulemaking Act of 1990”). If the Admin-  
17 istrator decides to proceed with a negotiated rulemaking,  
18 the Administrator shall, to the extent the Administrator  
19 deems practicable, give priority to completing that rule-  
20 making over completing concurrent non-negotiated  
21 rulemakings pursuant to this section. If the Administrator  
22 decides not to proceed with a negotiated rulemaking, the  
23 Administrator shall include an explanation of such deci-  
24 sion in any proposed regulation published pursuant to this  
25 section.

1 (c) PETITION.—

2 (1) SUBMISSION.—Any person may petition the  
3 Administrator to promulgate regulations under this  
4 section to prohibit or restrict the use of a regulated  
5 substance in a sector or subsector.

6 (2) DISPOSITION.—The Administrator shall  
7 grant or deny a petition received pursuant to para-  
8 graph (1) not later than 180 days after receipt of  
9 such petition.

10 (3) DENIAL.—If the Administrator denies a pe-  
11 tition received pursuant to paragraph (1), the Ad-  
12 ministrator shall publish in the Federal Register an  
13 explanation of the Administrator's decision.

14 (4) GRANTING.—If the Administrator grants a  
15 petition received pursuant to paragraph (1), the Ad-  
16 ministrator shall—

17 (A) propose regulations prohibiting or re-  
18 stricting the use of the regulated substance in  
19 the sector or subsector under subsection (a) not  
20 later than 270 days after granting such peti-  
21 tion; and

22 (B) promulgate final regulations prohib-  
23 iting or restricting the use of the regulated sub-  
24 stance in the sector or subsector under sub-

1 section (a) not later than 365 days after pro-  
2 posing such regulations.

3 (5) PUBLIC AVAILABILITY.—The Administrator  
4 shall—

5 (A) submit for publication in the Federal  
6 Register a notice of the availability of each peti-  
7 tion received pursuant to this subsection not  
8 later than 60 days after receipt of such petition;  
9 and

10 (B) shall make each such petition available  
11 in full upon request.

12 (d) CRITERIA.—In promulgating regulations under  
13 this section, the Administrator shall consider—

14 (1) promoting and supporting domestic eco-  
15 nomic development;

16 (2) maximizing protections for human health  
17 and the environment;

18 (3) minimizing costs for the production, use,  
19 and reclaiming of regulated substances;

20 (4) maximizing flexibility for the recovery, re-  
21 claiming, and re-use of regulated substances;

22 (5) ensuring consumer safety;

23 (6) the availability of substitutes for regulated  
24 substances, taking into account technological  
25 achievability, commercial demands, safety, and other

1 relevant factors, including lead times for equipment  
2 conversion; and

3 (7) minimizing any costs to consumers.

4 (e) EVALUATION.—For purposes of this subtitle, the  
5 Administrator shall—

6 (1) on an ongoing basis, evaluate the avail-  
7 ability of substitutes for regulated substances in a  
8 sector or subsector, taking into account technological  
9 achievability, commercial demands, safety, and other  
10 relevant factors, including lead times for equipment  
11 conversion; and

12 (2) maintain a public clearinghouse of such  
13 substitutes by sector and subsector, as applicable.

14 (f) COORDINATION.—In promulgating regulations to  
15 prohibit or restrict the use of a regulated substance in a  
16 sector or subsector under this section, the Administrator  
17 may coordinate such regulations with any other regula-  
18 tions pertaining to currently or potentially available sub-  
19 stitutes for regulated substances.

20 **SEC. 9207. RULEMAKING AUTHORITY.**

21 (a) RULEMAKINGS.—The Administrator may promul-  
22 gate such regulations as are necessary to carry out the  
23 functions of the Administrator under this subtitle.

24 (b) DELEGATION.—The Administrator may delegate  
25 to any officer or employee of the Environmental Protection

1 Agency such of the powers and duties of the Administrator  
2 under this subtitle as the Administrator determines to be  
3 appropriate.

4 (c) REQUIREMENTS.—In exercising any requirement  
5 or authority in this subtitle to act by regulation or to pro-  
6 mulgate regulations, the Administrator shall comply with  
7 the requirements of section 307(d) of the Clean Air Act  
8 (42 U.S.C. 7607(d)).

9 **SEC. 9208. RELATIONSHIP TO OTHER LAWS.**

10 Sections 113, 114, 304, and 307 of the Clean Air  
11 Act (42 U.S.C. 7413, 7414, 7604, 7607) shall apply to  
12 this subtitle and any regulations promulgated by the Ad-  
13 ministrator pursuant to this subtitle as though this sub-  
14 title were included in title VI of the Clean Air Act (42  
15 U.S.C. 7671 et seq.).

16 **Subtitle C—Clean Industrial**  
17 **Technology**

18 **SEC. 9301. PURPOSE.**

19 The purpose of this subtitle and the amendments  
20 made by this subtitle is to encourage the development and  
21 evaluation of innovative technologies aimed at increas-  
22 ing—

23 (1) the technological and economic competitive-  
24 ness of industry and manufacturing in the United  
25 States; and

1 (2) the emissions reduction of nonpower indus-  
2 trial sectors.

3 **SEC. 9302. INDUSTRIAL EMISSIONS REDUCTION TECH-**  
4 **NOLOGY DEVELOPMENT PROGRAM.**

5 (a) IN GENERAL.—Subtitle D of title IV of the En-  
6 ergy Independence and Security Act of 2007, as amended  
7 by this Act, is further amended by adding at the end the  
8 following:

9 **“SEC. 455. INDUSTRIAL EMISSIONS REDUCTION TECH-**  
10 **NOLOGY DEVELOPMENT PROGRAM.**

11 “(a) DEFINITIONS.—In this section:

12 “(1) DIRECTOR.—The term ‘Director’ means  
13 the Director of the Office of Science and Technology  
14 Policy.

15 “(2) ELIGIBLE ENTITY.—The term ‘eligible en-  
16 tity’ means—

17 “(A) a scientist or other individual with  
18 knowledge and expertise in emissions reduction;

19 “(B) an institution of higher education;

20 “(C) a nongovernmental organization;

21 “(D) a National Laboratory;

22 “(E) a private entity; and

23 “(F) a partnership or consortium of 2 or  
24 more entities described in subparagraphs (B)  
25 through (E).

1 “(3) EMISSIONS REDUCTION.—

2 “(A) IN GENERAL.—The term ‘emissions  
3 reduction’ means the reduction, to the max-  
4 imum extent practicable, of net nonwater green-  
5 house gas emissions to the atmosphere by en-  
6 ergy services and industrial processes.

7 “(B) EXCLUSION.—The term ‘emissions  
8 reduction’ does not include the elimination of  
9 carbon embodied in the principal products of in-  
10 dustrial manufacturing.

11 “(4) INSTITUTION OF HIGHER EDUCATION.—  
12 The term ‘institution of higher education’ has the  
13 meaning given the term in section 101 of the Higher  
14 Education Act of 1965 (20 U.S.C. 1001).

15 “(5) PROGRAM.—The term ‘program’ means  
16 the program established under subsection (b)(1).

17 “(6) CRITICAL MATERIAL OR MINERAL.—The  
18 term ‘critical material or mineral’ means a material  
19 or mineral that serves an essential function in the  
20 manufacturing of a product and has a high risk of  
21 a supply disruption, such that a shortage of such a  
22 material or mineral would have significant con-  
23 sequences for United States economic or national se-  
24 curity.

1       “(b) INDUSTRIAL EMISSIONS REDUCTION TECH-  
2 NOLOGY DEVELOPMENT PROGRAM.—

3           “(1) IN GENERAL.—Not later than 1 year after  
4 the date of enactment of this section, the Secretary,  
5 in coordination with the Director and in consultation  
6 with the heads of relevant Federal agencies, Na-  
7 tional Laboratories, industry, and institutions of  
8 higher education, shall establish a crosscutting re-  
9 search, development, and demonstration program to  
10 further the development and commercial application  
11 of innovative industrial emissions reduction tech-  
12 nologies that—

13           “(A) increase the technological and eco-  
14 nomic competitiveness of industry and manufac-  
15 turing in the United States; and

16           “(B) achieve emissions reduction in  
17 nonpower industrial sectors.

18       “(2) COORDINATION.—In carrying out the pro-  
19 gram, the Secretary shall, to the maximum extent  
20 practicable—

21           “(A) coordinate with each relevant office in  
22 the Department and any other Federal agency;

23           “(B) coordinate and collaborate with the  
24 Industrial Technology Innovation Advisory  
25 Committee established under section 456; and



1           “(C) coordinate with the energy-intensive  
2           industries program established under section  
3           452.

4           “(3) LEVERAGE OF EXISTING RESOURCES.—In  
5           carrying out the program, the Secretary shall lever-  
6           age, to the maximum extent practicable—

7           “(A) existing resources and programs of  
8           the Department and other relevant Federal  
9           agencies; and

10          “(B) public-private partnerships.

11          “(c) FOCUS AREAS.—The program shall focus on, to  
12          the maximum extent practicable—

13          “(1) industrial production processes, including  
14          technologies and processes that—

15               “(A) achieve emissions reduction in high-  
16               emissions industrial materials production proc-  
17               esses, including production processes for iron,  
18               steel, steel mill products, aluminum, cement,  
19               concrete, glass, pulp, paper, and industrial ce-  
20               ramics;

21               “(B) achieve emissions reduction in  
22               medium- and high-temperature heat generation,  
23               including—

24                       “(i) through electrification of heating  
25                       processes;

1 “(ii) through renewable heat genera-  
2 tion technology;

3 “(iii) through combined heat and  
4 power; and

5 “(iv) by switching to alternative fuels,  
6 including hydrogen;

7 “(C) achieve emissions reduction in chem-  
8 ical production processes;

9 “(D) leverage smart manufacturing tech-  
10 nologies and principles, digital manufacturing  
11 technologies, and advanced data analytics to de-  
12 velop advanced technologies and practices in in-  
13 formation, automation, monitoring, computa-  
14 tion, sensing, modeling, and networking that—

15 “(i) simulate manufacturing produc-  
16 tion lines;

17 “(ii) monitor and communicate pro-  
18 duction line status;

19 “(iii) manage and optimize energy  
20 productivity and cost throughout produc-  
21 tion; and

22 “(iv) model, simulate, and optimize  
23 the energy efficiency of manufacturing  
24 processes;

1           “(E) leverage the principles of sustainable  
2           manufacturing and sustainable chemistry to  
3           minimize the negative environmental impacts of  
4           manufacturing while conserving energy and re-  
5           sources, including—

6                   “(i) by designing products that enable  
7                   reuse, refurbishment, remanufacturing,  
8                   and recycling;

9                   “(ii) by minimizing waste from indus-  
10                  trial processes; and

11                  “(iii) by reducing resource intensity;  
12                  and

13               “(F) increase the energy efficiency of in-  
14               dustrial processes;

15               “(2) alternative materials that produce fewer  
16               emissions during production and result in fewer  
17               emissions during use, including—

18                   “(A) high-performance lightweight mate-  
19                   rials; and

20                   “(B) substitutions for critical materials  
21                   and minerals;

22               “(3) development of net-zero emissions liquid  
23               and gaseous fuels;

1           “(4) emissions reduction in shipping, aviation,  
2           and long distance transportation, including through  
3           the use of alternative fuels;

4           “(5) carbon capture technologies for industrial  
5           processes;

6           “(6) high-performance computing to develop ad-  
7           vanced materials and manufacturing processes con-  
8           tributing to the focus areas described in paragraphs  
9           (1) through (5), including—

10           “(A) modeling, simulation, and optimiza-  
11           tion to design energy efficient and sustainable  
12           products; and

13           “(B) the use of digital prototyping and ad-  
14           ditive manufacturing to enhance product de-  
15           sign;

16           “(7) other technologies that achieve net-zero  
17           emissions in nonpower industrial sectors as deter-  
18           mined by Secretary in coordination with the Direc-  
19           tor;and

20           “(8) incorporation of sustainable and green  
21           chemistry and engineering principles, practices, and  
22           methodologies, as the Secretary determines appro-  
23           priate; and

1 “(9) other research or technology areas identi-  
2 fied in the Emissions Reduction Roadmap author-  
3 ized in section 456.

4 “(d) GRANTS, CONTRACTS, COOPERATIVE AGREE-  
5 MENTS, AND DEMONSTRATION PROJECTS.—

6 “(1) GRANTS.—In carrying out the program,  
7 the Secretary shall award grants on a competitive  
8 basis to eligible entities for projects that the Sec-  
9 retary determines would best achieve the goals of the  
10 program.

11 “(2) CONTRACTS AND COOPERATIVE AGREE-  
12 MENTS.—In carrying out the program, the Secretary  
13 may enter into contracts and cooperative agreements  
14 with eligible entities and Federal agencies for  
15 projects that the Secretary determines would further  
16 the purposes of the program.

17 “(3) DEMONSTRATION PROJECTS.—In sup-  
18 porting technologies developed under this section,  
19 the Secretary shall fund demonstration projects that  
20 test and validate technologies described in subsection  
21 (c).

22 “(4) COST SHARING.—In awarding funds under  
23 this section, the Secretary shall require cost sharing  
24 in accordance with section 988 of the Energy Policy  
25 Act of 2005 (42 U.S.C. 16352).

1       “(e) AUTHORIZATION OF APPROPRIATIONS.—There  
2 are authorized to be appropriated to the Secretary to carry  
3 out the demonstration projects authorized in subsection  
4 (d)(3)—

5               “(1) \$20,000,000 for fiscal year 2021;

6               “(2) \$80,000,000 for fiscal year 2022;

7               “(3) \$100,000,000 for fiscal year 2023;

8               “(4) \$150,000,000 for fiscal year 2024; and

9               “(5) \$150,000,000 for fiscal year 2025.

10       “(f) COORDINATION.—The Secretary shall carry out  
11 the activities authorized in this section in accordance with  
12 section 203 of the Department of Energy Research and  
13 Innovation Act (42 U.S.C. 18631).”.

14       (b) TECHNICAL AMENDMENT.—The table of contents  
15 of the Energy Independence and Security Act of 2007  
16 (Public Law 110–140; 121 Stat. 1494) is amended by in-  
17 serting after the item relating to section 454 (as added  
18 by this Act) the following:

“Sec. 455. Industrial emissions reduction technology development program.”.

19       **SEC. 9303. INDUSTRIAL TECHNOLOGY INNOVATION ADVI-**  
20                               **SORY COMMITTEE.**

21       (a) IN GENERAL.—Subtitle D of title IV of the En-  
22 ergy Independence and Security Act of 2007, as amended  
23 by this Act, is further amended by adding at the end the  
24 following:

1 **“SEC. 456. INDUSTRIAL TECHNOLOGY INNOVATION ADVI-**  
2 **SORY COMMITTEE.**

3 “(a) DEFINITIONS.—In this section:

4 “(1) COMMITTEE.—The term ‘Committee’  
5 means the Industrial Technology Innovation Advi-  
6 sory Committee established under subsection (b).

7 “(2) DIRECTOR.—The term ‘Director’ means  
8 the Director of the Office of Science and Technology  
9 Policy.

10 “(3) EMISSIONS REDUCTION.—The term ‘emis-  
11 sions reduction’ has the meaning given the term in  
12 section 455(a).

13 “(4) PROGRAM.—The term ‘program’ means  
14 the industrial emissions reduction technology devel-  
15 opment program established under section  
16 455(b)(1).

17 “(b) ESTABLISHMENT.—Not later than 180 days  
18 after the date of enactment of this section, the Secretary,  
19 in coordination with the Director, shall establish an advi-  
20 sory committee, to be known as the ‘Industrial Technology  
21 Innovation Advisory Committee’.

22 “(c) MEMBERSHIP.—

23 “(1) APPOINTMENT.—The Committee shall be  
24 comprised of not fewer than 15 members, who shall  
25 be appointed by the Secretary, in coordination with  
26 the Director.

1           “(2) REPRESENTATION.—Members appointed  
2           pursuant to paragraph (1) shall include—

3                   “(A) not less than 1 representative of each  
4                   relevant Federal agency, as determined by the  
5                   Secretary;

6                   “(B) not less than 2 representatives of  
7                   labor groups;

8                   “(C) not less than 3 representatives of the  
9                   research community, which shall include aca-  
10                  demia and National Laboratories;

11                  “(D) not less than 2 representatives of  
12                  nongovernmental organizations;

13                  “(E) not less than 6 representatives of in-  
14                  dustry, the collective expertise of which shall  
15                  cover every focus area described in section  
16                  455(c);

17                  “(F) not less than 1 representative of a  
18                  State government; and

19                  “(G) any other individual whom the Sec-  
20                  retary, in coordination with the Director, deter-  
21                  mines to be necessary to ensure that the Com-  
22                  mittee is comprised of a diverse group of rep-  
23                  resentatives of industry, academia, independent  
24                  researchers, and public and private entities.



1           “(3) CHAIR.—The Secretary shall designate a  
2           member of the Committee to serve as Chair.

3           “(d) DUTIES.—

4           “(1) IN GENERAL.—The Committee shall—

5                   “(A) in consultation with the Secretary  
6                   and the Director, develop the missions and  
7                   goals of the program, which shall be consistent  
8                   with the purposes of the program described in  
9                   section 455(b)(1); and

10                   “(B) advise the Secretary and the Director  
11                   with respect to the program—

12                           “(i) by identifying and evaluating any  
13                           technologies being developed by the private  
14                           sector or other Federal agencies relating to  
15                           the focus areas described in section 455(c);

16                           “(ii) by identifying technology gaps in  
17                           the private sector in those focus areas, and  
18                           making recommendations to address those  
19                           gaps;

20                           “(iii) by surveying and analyzing fac-  
21                           tors that prevent the adoption of emissions  
22                           reduction technologies by the private sec-  
23                           tor; and

24                           “(iv) by recommending technology  
25                           screening criteria for technology developed

1 under the program to encourage adoption  
2 of the technology by the private sector; and  
3 “(C) develop the roadmap described in  
4 paragraph (2).

5 “(2) EMISSIONS REDUCTION ROADMAP.—

6 “(A) PURPOSE.—The purpose of the road-  
7 map developed under paragraph (1)(C) is to set  
8 forth a plan for achieving the goals of the pro-  
9 gram established in section 455(b)(1), including  
10 for the focus areas described in section 455(c).

11 “(B) CONTENTS.—The roadmap developed  
12 under paragraph (1)(C) shall—

13 “(i) specify near-term and long-term  
14 qualitative and quantitative objectives re-  
15 lating to each focus area described in sec-  
16 tion 455(c), including research, develop-  
17 ment, demonstration, and commercial ap-  
18 plication objectives;

19 “(ii) leverage existing roadmaps rel-  
20 evant to the program in section 455(b)(1)  
21 and the focus areas in section 455(c);

22 “(iii) specify the anticipated time-  
23 frame for achieving the objectives specified  
24 under clause (i);

1                   “(iv) include plans for developing  
2                   emissions reduction technologies that are  
3                   globally cost-competitive; and

4                   “(v) identify the appropriate role for  
5                   investment by the Federal Government, in  
6                   coordination with the private sector, to  
7                   achieve the objectives specified under  
8                   clause (i).

9           “(e) MEETINGS.—

10           “(1) FREQUENCY.—The Committee shall meet  
11           not less frequently than 2 times per year, at the call  
12           of the Chair.

13           “(2) INITIAL MEETING.—Not later than 30  
14           days after the date on which the members are ap-  
15           pointed under subsection (b), the Committee shall  
16           hold its first meeting.

17           “(f) COMMITTEE REPORT.—

18           “(1) IN GENERAL.—Not later than 2 years  
19           after the date of enactment of this section, and not  
20           less frequently than once every 3 years thereafter,  
21           the Committee shall submit to the Secretary a re-  
22           port on the progress of achieving the purposes of the  
23           program.

24           “(2) CONTENTS.—The report under paragraph  
25           (1) shall include—

1           “(A) a description of any technology inno-  
2           vation opportunities identified by the Com-  
3           mittee;

4           “(B) a description of any technology gaps  
5           identified by the Committee under subsection  
6           (d)(1)(B)(ii);

7           “(C) a review of the management, tech-  
8           nology screening, coordination, and industry  
9           utility of the program;

10          “(D) an evaluation of the progress of the  
11          program and the research, development, and  
12          demonstration activities funded under the pro-  
13          gram;

14          “(E) any recommended changes to the  
15          focus areas of the program described in section  
16          455(c);

17          “(F) a description of the manner in which  
18          the Committee has carried out the duties de-  
19          scribed in subsection (d)(1) and any relevant  
20          findings as a result of carrying out those duties;

21          “(G) the roadmap developed by the Com-  
22          mittee under subsection (d)(1)(C);

23          “(H) the progress made in achieving the  
24          goals set out in that roadmap;

1           “(I) an assessment of the extent to which  
2           progress has been made under the program in  
3           developing commercial, cost-competitive tech-  
4           nologies in each focus area described in section  
5           455(c); and

6           “(J) an assessment of the effectiveness of  
7           the program in coordinating efforts within the  
8           Department and with other Federal agencies to  
9           achieve the purposes of the program.

10       “(g) REPORT TO CONGRESS.—Not later than 60 days  
11 after receiving a report from the Committee under sub-  
12 section (f), the Secretary shall submit a copy of that re-  
13 port to the Committee on Science, Space, and Technology  
14 of the House of Representatives and the Committee on  
15 Energy and Natural Resources of the Senate.

16       “(h) APPLICABILITY OF FEDERAL ADVISORY COM-  
17 MITTEE ACT.—Except as otherwise provided in this sec-  
18 tion, the Federal Advisory Committee Act (5 U.S.C. App.)  
19 shall apply to the Committee.”.

20       (b) TECHNICAL AMENDMENT.—The table of contents  
21 of the Energy Independence and Security Act of 2007  
22 (Public Law 110–140; 121 Stat. 1494) is amended by in-  
23 serting after the item relating to section 455 (as added  
24 by this Act) the following:

“Sec. 456. Industrial Technology Innovation Advisory Committee.”.

1   **SEC. 9304. TECHNICAL ASSISTANCE PROGRAM TO IMPE-**  
2                   **MENT INDUSTRIAL EMISSIONS REDUCTION.**

3           (a) IN GENERAL.—Subtitle D of title IV of the En-  
4   ergy Independence and Security Act of 2007, as amended  
5   by this Act, is further amended by adding at the end the  
6   following:

7   **“SEC. 457. TECHNICAL ASSISTANCE PROGRAM TO IMPE-**  
8                   **MENT INDUSTRIAL EMISSIONS REDUCTION.**

9           “(a) DEFINITIONS.—In this section:

10               “(1) ELIGIBLE ENTITY.—The term ‘eligible en-  
11   tity’ means—

12                   “(A) a State;

13                   “(B) a unit of local government;

14                   “(C) a territory or possession of the  
15   United States;

16                   “(D) a relevant State or local office, in-  
17   cluding an energy office;

18                   “(E) a tribal organization (as defined in  
19   section 3765 of title 38, United States Code);

20                   “(F) an institution of higher education;

21                   “(G) a private entity; and

22                   “(H) a trade association or technical soci-  
23   ety.

24               “(2) EMISSIONS REDUCTION.—The term ‘emis-  
25   sions reduction’ has the meaning given the term in  
26   section 455(a).

1 “(3) INSTITUTION OF HIGHER EDUCATION.—

2 The term ‘institution of higher education’ has the  
3 meaning given the term in section 101 of the Higher  
4 Education Act of 1965 (20 U.S.C. 1001).

5 “(4) PROGRAM.—The term ‘program’ means  
6 the program established under subsection (b).

7 “(b) ESTABLISHMENT.—Not later than one year  
8 after the date of enactment of this section, the Secretary  
9 shall establish a program to provide technical assistance  
10 to eligible entities to promote the commercial application  
11 of emission reduction technologies developed through the  
12 program established in section 455(b).

13 “(c) APPLICATIONS.—

14 “(1) APPLICATION PROCESS.—The Secretary  
15 shall seek applications for technical assistance under  
16 the program on a periodic basis, but not less fre-  
17 quently than once every 12 months.

18 “(2) PRIORITIES.—In selecting eligible entities  
19 for technical assistance under the program, the Sec-  
20 retary shall give priority to an eligible entity—

21 “(A) carrying out a commercial application  
22 of technology that has the greatest potential for  
23 emissions reduction in nonpower industrial sec-  
24 tors;

1           “(B) located in a State that has histori-  
2           cally relied on industrial sectors for a substan-  
3           tial portion of the State economy, as deter-  
4           mined by the Secretary, taking into account  
5           employment data, per capita income, and other  
6           indicators of economic output in the State; or

7           “(C) located in a State that has experi-  
8           enced significant decline in the economic con-  
9           tribution of industry to the State.”.

10       (b) TECHNICAL AMENDMENT.—The table of contents  
11 of the Energy Independence and Security Act of 2007  
12 (Public Law 110–140; 121 Stat. 1494) is amended by in-  
13 serting after the item relating to section 456 (as added  
14 by this Act) the following:

“Sec. 457. Technical assistance program to implement industrial emissions re-  
duction.”.

15 **SEC. 9305. COORDINATION OF RESEARCH AND DEVELOP-**  
16 **MENT OF ENERGY EFFICIENT TECH-**  
17 **NOLOGIES FOR INDUSTRY.**

18       Section 6(a) of the American Energy Manufacturing  
19 Technical Corrections Act (42 U.S.C. 6351(a)) is amend-  
20 ed—

21       (1) by striking “Industrial Technologies Pro-  
22       gram” each place it appears and inserting “Ad-  
23       vanced Manufacturing Office”; and



1 (2) in the matter preceding paragraph (1), by  
2 striking “Office of Energy” and all that follows  
3 through “Office of Science” and inserting “Depart-  
4 ment of Energy”.

5 **Subtitle D—Combined Heat and**  
6 **Power Support**

7 **SEC. 9401. CHP TECHNICAL ASSISTANCE PARTNERSHIP**  
8 **PROGRAM.**

9 (a) IN GENERAL.—Section 375 of the Energy Policy  
10 and Conservation Act (42 U.S.C. 6345) is amended to  
11 read as follows:

12 **“SEC. 375. CHP TECHNICAL ASSISTANCE PARTNERSHIP**  
13 **PROGRAM.**

14 “(a) RENAMING.—

15 “(1) IN GENERAL.—The Clean Energy Applica-  
16 tion Centers of the Department of Energy are redes-  
17 igned as the CHP Technical Assistance Partner-  
18 ship Program (referred to in this section as the  
19 ‘Program’).

20 “(2) PROGRAM DESCRIPTION.—The Program  
21 shall consist of—

22 “(A) the 10 regional CHP Technical As-  
23 sistance Partnerships in existence on the date  
24 of enactment of the Clean Economy Jobs and  
25 Innovation Act;

1 “(B) such other regional CHP Technical  
2 Assistance Partnerships as the Secretary may  
3 establish; and

4 “(C) any supporting technical activities  
5 under the Technical Partnership Program of  
6 the Advanced Manufacturing Office.

7 “(3) REFERENCES.—Any reference in any law,  
8 rule, regulation, or publication to a Combined Heat  
9 and Power Application Center or a Clean Energy  
10 Application Center shall be deemed to be a reference  
11 to the Program.

12 “(b) CHP TECHNICAL ASSISTANCE PARTNERSHIP  
13 PROGRAM.—

14 “(1) IN GENERAL.—The Program shall—

15 “(A) operate programs to encourage de-  
16 ployment of combined heat and power, waste  
17 heat to power, and efficient district energy (col-  
18 lectively referred to in this subsection as ‘CHP’)  
19 technologies by providing education and out-  
20 reach to—

21 “(i) building, industrial, and electric  
22 and natural gas utility professionals;

23 “(ii) State and local policymakers;  
24 and

1                   “(iii) other individuals and organiza-  
2                   tions with an interest in efficient energy  
3                   use, local or opportunity fuel use, resil-  
4                   iency, or energy security, microgrids, and  
5                   district energy; and

6                   “(B) provide project specific support to  
7                   building and industrial professionals through  
8                   economic and engineering assessments and ad-  
9                   visory activities.

10                  “(2) FUNDING FOR CERTAIN ACTIVITIES.—

11                   “(A) IN GENERAL.—The Program shall  
12                   make funds available to institutions of higher  
13                   education, research centers, and other appro-  
14                   priate institutions to ensure the continued oper-  
15                   ations and effectiveness of the regional CHP  
16                   Technical Assistance Partnerships.

17                   “(B) USE OF FUNDS.—Funds made avail-  
18                   able under subparagraph (A) may be used—

19                   “(i) to research, develop, and dis-  
20                   tribute informational materials relevant to  
21                   manufacturers, commercial buildings, insti-  
22                   tutional facilities, and Federal sites, in-  
23                   cluding continued support of the mission  
24                   goals of the Department of Defense, on

1 CHP and microgrid technologies, including  
2 continuation and updating of—

3 “(I) the CHP installation data-  
4 base;

5 “(II) CHP technology potential  
6 analyses;

7 “(III) State CHP resource pages;  
8 and

9 “(IV) CHP Technical Assistance  
10 Partnerships websites;

11 “(ii) to research, develop, and conduct  
12 target market workshops, reports, semi-  
13 nars, internet programs, CHP resiliency  
14 resources, and other activities to provide  
15 education to end users, regulators, and  
16 stakeholders in a manner that leads to the  
17 deployment of CHP technologies;

18 “(iii) to provide or coordinate onsite  
19 assessments for sites and enterprises that  
20 may consider deployment of CHP tech-  
21 nology;

22 “(iv) to perform market research to  
23 identify high profile candidates for deploy-  
24 ment of CHP technologies, hybrid renew-

1           able-CHP technologies, microgrids, and  
2           clean energy;

3           “(v) to provide nonbiased engineering  
4           support to sites considering deployment of  
5           CHP technologies;

6           “(vi) to assist organizations devel-  
7           oping clean energy technologies and poli-  
8           cies in overcoming barriers to deployment;  
9           and

10          “(vii) to assist companies and organi-  
11          zations with field validation and perform-  
12          ance evaluations of CHP and other clean  
13          energy technologies implemented.

14          “(C) DURATION.—The Program shall  
15          make funds available under subparagraph (A)  
16          for a period of 5 years.

17          “(c) AUTHORIZATION OF APPROPRIATIONS.—There  
18          are authorized to be appropriated to carry out this section  
19          \$12,000,000 for each of fiscal years 2021 through 2025.”.

20          (b) CONFORMING AMENDMENT.—The table of con-  
21          tents of the Energy Policy and Conservation Act is amend-  
22          ed by striking the item relating to section 375 and insert-  
23          ing the following:

        “375. CHP Technical Assistance Partnership Program.”.

# 1   **TITLE X—CRITICAL MATERIALS**

## 2   **SEC. 10101. DEFINITIONS.**

3       In this title:

4           (1) **APPROPRIATE CONGRESSIONAL COMMIT-**  
5       **TEES.**—The term “appropriate Congressional com-  
6       mittees” means the Committee on Science, Space,  
7       and Technology of the House of Representatives and  
8       the Committee on Commerce, Science, and Trans-  
9       portation and the Committee on Energy and Natural  
10      Resources of the Senate.

11          (2) **CENTER.**—The term “Center” means the  
12      Critical Materials Information Center established  
13      under section 10122(a).

14          (3) **DEPARTMENT.**—The term “Department”  
15      means the Department of Energy.

16          (4) **ENERGY CRITICAL MATERIAL.**—The term  
17      “energy critical material” means any of a class of  
18      non-fuel materials that have a high risk of a supply  
19      disruption and are critical to one or more existing or  
20      new, energy-related technologies such that a sub-  
21      stantial supply disruption of such material would  
22      significantly inhibit large-scale deployment of tech-  
23      nologies that produce, transmit, store, or conserve  
24      energy.

1 (5) INSTITUTION OF HIGHER EDUCATION.—The  
2 term “institution of higher education” has the  
3 meaning given such term in section 101(a) of the  
4 Higher Education Act of 1965 (20 U.S.C. 1001(a)).

5 (6) PROGRAM.—The term “program” means  
6 the program authorized in section 10121(a).

7 (7) SECRETARY.—The term “Secretary” means  
8 the Secretary of Energy.

9 **Subtitle A—Energy Critical**  
10 **Materials**

11 **SEC. 10121. ENERGY CRITICAL MATERIALS PROGRAM.**

12 (a) AUTHORIZATION OF PROGRAM.—

13 (1) IN GENERAL.—The Secretary shall carry  
14 out a cross-cutting program of research, develop-  
15 ment, demonstration, and commercial application to  
16 assure the long-term, secure, and sustainable supply  
17 of energy critical materials sufficient to satisfy the  
18 national security, economic well-being, public health,  
19 and industrial production needs of the United  
20 States. This program may be carried out primarily  
21 by an Energy Innovation Hub established under sec-  
22 tion 206 of the Department of Energy Research Co-  
23 ordination Act (42 U.S.C. 18632).

24 (2) PROGRAM ACTIVITIES.—In carrying out this  
25 program, the Secretary shall focus on areas that the

1 private sector by itself is not likely to undertake be-  
2 cause of technical and financial uncertainty and sup-  
3 port activities to—

4 (A) identify, develop, and test alternative  
5 minerals, metals, and replacement materials  
6 that—

7 (i) can be substituted for energy crit-  
8 ical materials and maintain or exceed cur-  
9 rent performance; or

10 (ii) enable new component and system  
11 design options that lessen the need for en-  
12 ergy critical materials;

13 particularly those alternative materials with ex-  
14 isting production sources within the United  
15 States and not subject to substantial supply  
16 disruptions;

17 (B) engineer and test diverse applications  
18 that—

19 (i) accelerate recycling and use of re-  
20 cycled energy critical materials;

21 (ii) use alternative materials; or

22 (iii) seek to minimize energy critical  
23 material content;

24 (C) develop innovative technologies and  
25 practices to diversify commercially viable and



1 sustainable domestic sources of energy critical  
2 materials, including technologies for recovery  
3 from waste streams, more efficient recovery of  
4 coproducts and byproducts, and reduction of  
5 energy intensity, environmental impact, and  
6 costs of the extraction, production, separation,  
7 alloying, and processing of energy critical mate-  
8 rials;

9 (D) improve the understanding of the per-  
10 formance, processing, and adaptability in engi-  
11 neering designs using energy critical materials;

12 (E) develop advanced theoretical, computa-  
13 tional, and experimental tools necessary to sup-  
14 port the crosscutting research and development  
15 needs of diverse critical materials stakeholders;

16 (F) ensure that relevant facilities are avail-  
17 able and equipped to assist in carrying out the  
18 direction of the program;

19 (G) advance new mapping and analytical  
20 technologies and techniques that identify and  
21 characterize domestic critical materials re-  
22 sources; and

23 (H) improve the understanding of energy  
24 critical material supply chains, risks from sup-

1           ply disruption, supply restriction, volatility in  
2           demand, and ability to substitute.

3           (3) COORDINATION.—In carrying out the pro-  
4           gram under subsection (a) the Secretary of Energy  
5           shall coordinate and leverage resources and expertise  
6           across the Department and from—

7                   (A) Federal agencies;

8                   (B) National Laboratories;

9                   (C) academic institutions;

10                  (D) private sector entities, including small  
11           businesses;

12                  (E) nongovernmental organizations; and

13                  (F) other relevant entities or individuals.

14           (4) EXPANDING PARTICIPATION.—In carrying  
15           out the program, the Secretary shall encourage mul-  
16           tidisciplinary collaborations of participants, including  
17           opportunities for students and post-doctoral staff at  
18           institutions of higher education.

19           (5) INTERNATIONAL COLLABORATION.—In car-  
20           rying out the program, the Secretary shall collabo-  
21           rate, to the extent practicable, on activities of mu-  
22           tual interest with the relevant agencies and non-  
23           governmental organizations of foreign countries with  
24           interests relating to energy critical materials.

25           (b) PLAN.—

1           (1) IN GENERAL.—Within 180 days after the  
2           date of enactment of this Act and biennially there-  
3           after, the Secretary shall prepare and submit to the  
4           appropriate Congressional committees a plan to  
5           carry out the program.

6           (2) SPECIFIC REQUIREMENTS.—The plan re-  
7           quired under paragraph (1) shall include a descrip-  
8           tion of—

9                   (A) the research and development activities  
10           to be carried out by the program during the  
11           subsequent 2 years;

12                   (B) the expected contributions of the pro-  
13           gram to the creation of innovative methods and  
14           technologies for the efficient and sustainable  
15           provision of energy critical materials to the do-  
16           mestic economy;

17                   (C) the expected activities of the program  
18           to mitigate the adverse environmental and  
19           health impacts of the extraction, processing,  
20           manufacturing, use, recovery, and recycling of  
21           energy critical materials; and

22                   (D) how the program is promoting the  
23           broadest possible participation by academic, in-  
24           dustrial, the public, and other contributors.

1           (3) CONSULTATION.—In preparing each plan  
2           under paragraph (1), the Secretary shall consult  
3           with appropriate representatives of industry, institu-  
4           tions of higher education, Department of Energy na-  
5           tional laboratories, professional and technical soci-  
6           eties, other Federal agencies, States, tribes, the pub-  
7           lic, and other entities, as determined by the Sec-  
8           retary.

9           (c) COORDINATION AND NONDUPLICATION.—To the  
10          maximum extent practicable, the Secretary shall ensure  
11          that the activities carried out under this subtitle are co-  
12          ordinated with, and do not unnecessarily duplicate the ef-  
13          forts of, other programs within the Federal Government.

14          (d) STANDARD OF REVIEW.—Not later than 2 years  
15          after the date of the enactment of this Act the Secretary  
16          of Energy shall conduct a review of activities carried out  
17          under this program described in subsection (a) to deter-  
18          mine the achievement of technical milestones established  
19          in subsection (e).

20          (e) CRITICAL MATERIALS CONSORTIUM.—

21               (1) IN GENERAL.—Not later than 1 year after  
22               the date of enactment of this Act, the Secretary of  
23               Energy shall establish and operate a Critical Mate-  
24               rials Consortium (referred to in this section as the  
25               “Consortium”) for the purpose of supporting the

1 program under subsection (a) by providing, to the  
2 maximum extent practicable, a centralized entity for  
3 multidisciplinary, collaborative, critical materials re-  
4 search and development.

5 (2) LEADERSHIP.—If an Energy Innovation  
6 Hub, consistent with section 206 of the Department  
7 of Energy Research Coordination Act, that is fo-  
8 cused on energy critical materials exists on the date  
9 of enactment of this Act, then the Secretary shall le-  
10 verage the personnel and expertise of such a Hub to  
11 manage the Consortium for at least a 3 year period  
12 following the establishment of the Consortium.

13 (3) MEMBERSHIP.—The members of the Con-  
14 sortium shall be representatives from relevant Fed-  
15 eral agencies, the National Laboratories, institutions  
16 of higher education, private sector entities, multi-in-  
17 stitutional collaborations, and other appropriate enti-  
18 ties.

19 (4) ACTIVITIES.—The Consortium shall—

20 (A) develop and implement a multi-year  
21 program plan which includes the determination  
22 of technical goals and milestones and prioritizes  
23 leveraging of the user facilities, high perform-  
24 ance computing capabilities, and expertise of

1 the Department of Energy and the National  
2 Laboratories; and

3 (B) submit an annual report to the Sec-  
4 retary of Energy summarizing the activities of  
5 the Consortium which includes an evaluation of  
6 the Consortium's role in the achievement of  
7 technical milestones determined in subpara-  
8 graph (A).

9 (5) DURATION.—The Consortium established  
10 under this subsection shall receive support for a pe-  
11 riod of not more than 5 years, subject to the avail-  
12 ability of appropriations.

13 (6) RENEWAL.—Upon the expiration of any pe-  
14 riod of support of the Consortium, the Secretary of  
15 Energy may renew support for the Consortium, on  
16 a merit-reviewed basis, for a period of not more than  
17 5 years.

18 (7) TERMINATION.—Consistent with the exist-  
19 ing authorities of the Department, the Secretary of  
20 Energy may terminate the Consortium for cause  
21 during the performance period.

22 (f) CRITICAL MATERIALS AND SUPPLY CHAIN RE-  
23 SEARCH FACILITY.—The Secretary shall support con-  
24 struction of a facility that provides an integrated, rapidly  
25 reconfigurable research platform to further enable re-

1 search and development activities throughout the supply  
2 chain for energy critical materials.

3 (g) AUTHORIZATION OF APPROPRIATIONS.—There  
4 are authorized to be appropriated to the Secretary of En-  
5 ergy \$135,000,000 for each of fiscal years 2021 through  
6 2025 to carry out this section.

7 **SEC. 10122. CRITICAL MATERIALS RESEARCH DATABASE**  
8 **AND INFORMATION CENTER.**

9 (a) IN GENERAL.—In carrying out the program es-  
10 tablished under section 10121, the Secretary, in consulta-  
11 tion with the Director of the National Science Foundation  
12 shall establish and operate a Critical Materials Informa-  
13 tion Center to collect, catalogue, disseminate, and archive  
14 information on energy critical materials in coordination  
15 with the Office of Scientific and Technical Information of  
16 the Department of Energy, and support the development  
17 of a web-based platform to provide public access to a data-  
18 base of computed information on known and predicted  
19 critical materials and related material properties and com-  
20 putational tools in order to—

21 (1) accelerate breakthroughs in energy critical  
22 materials identification and design;

23 (2) strengthen the foundation for technologies  
24 that will enable more sustainable recycling, substi-  
25 tution, use, and recovery and minimize the environ-

1        mental impacts of methods for extraction, proc-  
2        essing, and manufacturing of energy critical mate-  
3        rials; and

4            (3) drive the development of advanced materials  
5        for applications that span the Department's missions  
6        in energy, environment, and national security.

7        (b) ACTIVITIES.—In carrying out this section, the  
8        Secretary shall—

9            (1) conduct cooperative research with industry,  
10        academia, and other research institutions to facili-  
11        tate the design of novel materials, including critical  
12        materials and substitutes for critical materials;

13            (2) leverage existing high-performance com-  
14        puting systems to conduct high throughput calcula-  
15        tions and develop computing and data mining algo-  
16        rithms for the prediction of material properties, in-  
17        cluding a focus on critical materials;

18            (3) leverage and support research in mineralogy  
19        and mineral chemistry to enhance the under-  
20        standing, prediction, and manipulation of critical  
21        materials;

22            (4) assist scientists and engineers in making  
23        the fullest possible use of the Department's relevant  
24        data holdings, including the scientific and technical



1 data generated by the research and development ac-  
2 tivities funded under section 1021;

3 (5) seek and incorporate other information on  
4 energy critical materials to enhance the Depart-  
5 ment's utility for program participants and other  
6 users;

7 (6) manage and make available to researchers  
8 and the public accessible, curated, standardized, se-  
9 cure, and privacy protected data sets from the public  
10 and private sectors for the purposes of critical mate-  
11 rials research and development activities.

12 (c) COORDINATION.—To carry out this section, the  
13 Secretary of Energy shall leverage and ensure the coordi-  
14 nation of relevant programs, facilities, and activities  
15 across the Department, including the Critical Materials  
16 Consortium established under section 10121(e).

17 (d) SECURITY.—In carrying out the activities author-  
18 ized by this section, the Secretary of Energy, in consulta-  
19 tion with the Director of the National Science Foundation,  
20 shall ensure proper security controls are in place to protect  
21 proprietary or sensitive data, as appropriate.

22 **SEC. 10123. CRITICAL MATERIALS INTERAGENCY SUB-**  
23 **COMMITTEE.**

24 (a) IN GENERAL.—The Critical Minerals Sub-  
25 committee of the National Science and Technology Council

1 (referred to in this section as the “Subcommittee”), shall  
2 coordinate Federal science and technology efforts to en-  
3 sure secure, reliable, and environmentally sustainable sup-  
4 plies of critical materials to the United States.

5 (b) PURPOSES.—the purposes of the Subcommittee  
6 shall be—

7 (1) to advise and assist the National Science  
8 and Technology Council, including the Committee on  
9 Homeland and National Security, on United States  
10 policies, procedures, and plans as it relates to crit-  
11 ical materials, including—

12 (A) Federal research, development, and  
13 commercial application efforts to minimize the  
14 environmental impacts of methods for extrac-  
15 tions, concentration, separation and purification  
16 of conventional, secondary, and unconventional  
17 sources of critical materials;

18 (B) efficient use, substitution, and reuse of  
19 critical materials;

20 (C) the critical materials workforce of the  
21 United States; and

22 (D) United States private industry invest-  
23 ments in innovation and technology transfer  
24 from federally funded science and technology;

1           (2) to identify emerging opportunities, stimu-  
2           late international cooperation, and foster the devel-  
3           opment of secure and reliable supply chains of crit-  
4           ical materials and establish scenario modeling sys-  
5           tems for supply problems of critical materials and  
6           energy critical materials;

7           (3) to ensure the transparency of information  
8           and data related to critical materials; and

9           (4) to provide recommendations on coordination  
10          and collaboration among the research, development,  
11          and deployment programs and activities of Federal  
12          agencies to promote a secure and reliable supply of  
13          critical materials necessary to maintain national se-  
14          curity, economic well-being, public health, and indus-  
15          trial production.

16          (c) RESPONSIBILITIES.—In carrying out paragraphs  
17          (1) and (2), the Subcommittee may, taking into account  
18          the findings and recommendations of relevant advisory  
19          committees—

20                (1) provide recommendations on how Federal  
21                agencies may improve the topographic, geologic, and  
22                geophysical mapping of the United States and im-  
23                prove the discoverability, accessibility, and usability  
24                of the resulting and existing data, to the extent per-  
25                mitted by law and subject to appropriate limitation

1       for purposes of privacy and security; assess the  
2       progress towards developing critical materials recy-  
3       cling and reprocessing technologies, and techno-  
4       logical alternatives to critical materials;

5           (2) establish a mechanism for the coordination  
6       and evaluation of Federal programs with energy crit-  
7       ical material needs, including Federal programs in-  
8       volving research and development, in a manner that  
9       complements related efforts carried out by the pri-  
10      vate sector and other domestic and international  
11      agencies and organizations;

12          (3) examine options for accessing and devel-  
13      oping critical materials through investment and  
14      trade with our allies and partners and provide rec-  
15      ommendations;

16          (4) evaluate and provide recommendations to  
17      incentivize the development and use of advances in  
18      science and technology in the private industry;

19          (5) assess the need for and make recommenda-  
20      tions to address the challenges the United States  
21      critical materials supply chain workforce faces, in-  
22      cluding aging and retiring personnel and faculty,  
23      and foreign competition for United States talent;

24          (6) develop, and update as necessary, a stra-  
25      tegic plan to guide Federal programs and activities

1 to enhance scientific and technical capabilities across  
2 critical material supply chains, including a roadmap  
3 that identifies key research and development needs  
4 and coordinates on-going activities for source diver-  
5 sification, more efficient use, recycling, and substi-  
6 tution for critical materials; as well as cross-cutting  
7 mining science, data science techniques, materials  
8 science, manufacturing science and engineering,  
9 computational modeling, and environmental health  
10 and safety research and development; and

11 (7) assess the need for, and make recommenda-  
12 tions concerning, the availability and adequacy of  
13 the supply of technically trained personnel necessary  
14 for energy critical materials research, development,  
15 extraction, and industrial production, with a par-  
16 ticular focus on the problem of attracting and main-  
17 taining high-quality professionals for maintaining an  
18 adequate supply of energy critical materials; and

19 (8) report to the appropriate Congressional  
20 committees on activities and findings under this sec-  
21 tion.

1 **Subtitle B—National Materials and**  
2 **Minerals Policy, Research, and**  
3 **Development**

4 **SEC. 10141. AMENDMENTS TO NATIONAL MATERIALS AND**  
5 **MINERALS POLICY, RESEARCH AND DEVEL-**  
6 **OPMENT ACT OF 1980.**

7 (a) PROGRAM PLAN.—Section 5 of the National Ma-  
8 terials and Minerals Policy, Research and Development  
9 Act of 1980 (30 U.S.C. 1604) is amended—

10 (1) by striking “date of enactment of this Act”  
11 each place it appears and inserting “date of enact-  
12 ment of the Clean Economy Jobs and Innovation  
13 Act”;

14 (2) in subsection (b)(1), by striking “Federal  
15 Coordinating Council for Science, Engineering, and  
16 Technology” and inserting “National Science and  
17 Technology Council”;

18 (3) in subsection (c)—

19 (A) in the matter preceding paragraph  
20 (1)—

21 (i) by striking “the Federal Emer-  
22 gency” and all that follows through “Agen-  
23 cy, and”; and

24 (ii) by striking “appropriate shall”  
25 and inserting “appropriate, shall”;

1 (B) by striking paragraph (1);

2 (C) in paragraph (2), by striking “in the  
3 case” and all that follows through “sub-  
4 section,”;

5 (D) by redesignating paragraphs (2) and  
6 (3) as paragraphs (1) and (2), respectively; and

7 (E) by amending paragraph (2), as so re-  
8 designated, to read as follows:

9 “(2) assess the adequacy and stability of the  
10 supply of materials necessary to maintain national  
11 security, economic well-being, public health, and in-  
12 dustrial production.”;

13 (4) by striking subsection (d); and

14 (5) by redesignating subsections (e) and (f) as  
15 subsections (d) and (e), respectively.

16 (b) POLICY.—Section 3 of the National Materials and  
17 Minerals Policy, Research and Development Act of 1980  
18 (30 U.S.C. 1602) is amended—

19 (1) by striking “The Congress declares that it”  
20 and inserting “It”; and

21 (2) by striking “The Congress further declares  
22 that implementation” and inserting “Implementa-  
23 tion”.

24 (c) IMPLEMENTATION.—Section 4 of the National  
25 Materials and Minerals Policy, Research and Development

1 Act of 1980 (30 U.S.C. 1603) is amended, in the matter  
2 preceding paragraph (1)—

3 (1) by striking “For the purpose” and all that  
4 follows through “declares that the” and inserting  
5 “The”; and

6 (2) by striking “departments and agencies,”  
7 and inserting “departments and agencies to imple-  
8 ment the policy specified in section 3”.

9 **SEC. 10142. CONFORMING REPEAL.**

10 The National Critical Materials Act of 1984 (30  
11 U.S.C. 1801 et seq.) is repealed.

12 **TITLE XI—ENVIRONMENTAL**  
13 **JUSTICE**

14 **SEC. 11001. DEFINITIONS.**

15 In this title:

16 (1) ADMINISTRATOR.—The term “Adminis-  
17 trator” means the Administrator of the Environ-  
18 mental Protection Agency.

19 (2) ADVISORY COUNCIL.—The term “Advisory  
20 Council” means the National Environmental Justice  
21 Advisory Council described in section 11009.

22 (3) AGGRIEVED PERSON.—The term “aggrieved  
23 person” means a person aggrieved by discrimination  
24 on the basis of race, color, or national origin.



1           (4) CLEARINGHOUSE.—The term “Clearing-  
2           house” means the Environmental Justice Clearing-  
3           house established by the Administrator under section  
4           11007.

5           (5) COMMUNITY OF COLOR.—The term “com-  
6           munity of color” means any geographically distinct  
7           area the population of color of which is higher than  
8           the average population of color of the State in which  
9           the community is located.

10          (6) COMMUNITY-BASED SCIENCE.—The term  
11          “community-based science” means voluntary public  
12          participation in the scientific process and the incor-  
13          poration of data and information generated outside  
14          of traditional institutional boundaries to address  
15          real-world problems in ways that may include formu-  
16          lating research questions, conducting scientific ex-  
17          periments, collecting and analyzing data, inter-  
18          preting results, making new discoveries, developing  
19          technologies and applications, and solving complex  
20          problems, with an emphasis on the democratization  
21          of science and the engagement of diverse people and  
22          communities.

23          (7) COVERED AGENCY.—The term “covered  
24          agency” means an agency described in section  
25          11003(c).

1           (8) DEMONSTRATES.—The term “dem-  
2       onstrates” means meets the burdens of going for-  
3       ward with the evidence and of persuasion.

4           (9) DIRECTOR.—The term “Director” means  
5       the Director of the National Institute of Environ-  
6       mental Health Sciences.

7           (10) DISPARATE IMPACT.—The term “disparate  
8       impact” means an action or practice that, even if  
9       appearing neutral, actually has the effect of sub-  
10      jecting persons to discrimination because of their  
11      race, color, or national origin.

12          (11) DISPROPORTIONATE BURDEN OF ADVERSE  
13      HUMAN HEALTH OR ENVIRONMENTAL EFFECTS.—  
14      The term “disproportionate burden of adverse  
15      human health or environmental effects” means a sit-  
16      uation where there exists higher or more adverse  
17      human health or environmental effects on commu-  
18      nities of color, low-income communities, and Tribal  
19      and indigenous communities.

20          (12) ENVIRONMENTAL JUSTICE.—The term  
21      “environmental justice” means the fair treatment  
22      and meaningful involvement of all individuals, re-  
23      gardless of race, color, culture, national origin, edu-  
24      cational level, or income, with respect to the develop-  
25      ment, implementation, and enforcement of environ-

1       mental laws, regulations, and policies to ensure  
2       that—

3               (A) populations of color, communities of  
4               color, Tribal and indigenous communities, and  
5               low-income communities have access to public  
6               information and opportunities for meaningful  
7               public participation relating to human health  
8               and environmental planning, regulations, and  
9               enforcement;

10              (B) Each population of color or community  
11              of color, Tribal and indigenous community, or  
12              low-income community enjoy the same degree of  
13              protection from pollution or other environ-  
14              mental and health hazards; and

15              (C) the 17 Principles of Environmental  
16              Justice written and adopted at the First Na-  
17              tional People of Color Environmental Leader-  
18              ship Summit held on October 24 through 27,  
19              1991, in Washington, DC, are upheld.

20              (13) ENVIRONMENTAL JUSTICE COMMUNITY.—

21       The term “environmental justice community” means  
22       a community with significant representation of com-  
23       munities of color, low-income communities, or Tribal  
24       and indigenous communities, that experiences, or is

1 at risk of experiencing higher or more adverse  
2 human health or environmental effects.

3 (14) FAIR TREATMENT.—The term “fair treat-  
4 ment” means the conduct of a program, policy, prac-  
5 tice or activity by a Federal agency in a manner that  
6 ensures that no group of individuals (including ra-  
7 cial, ethnic, or socioeconomic groups) experience a  
8 disproportionate burden of adverse human health or  
9 environmental effects resulting from such program,  
10 policy, practice, or activity, as determined through  
11 consultation with, and with the meaningful partici-  
12 pation of, individuals from the communities affected  
13 by a program, policy, practice or activity of a Fed-  
14 eral agency.

15 (15) FEDERAL AGENCY.—The term “Federal  
16 agency” means—

17 (A) each Federal agency represented on  
18 the Working Group; and

19 (B) any other Federal agency that carries  
20 out a Federal program or activity that substan-  
21 tially affects human health or the environment,  
22 as determined by the President.

23 (16) TRIBAL AND INDIGENOUS COMMUNITY.—  
24 The term “Tribal and indigenous community” refers  
25 to a population of people who are members of—

- 1 (A) a federally recognized Indian Tribe;
- 2 (B) a State-recognized Indian Tribe;
- 3 (C) an Alaska Native or Native Hawaiian
- 4 community or organization; and
- 5 (D) any other community of indigenous
- 6 people located in a State.

7 (17) INDIAN TRIBE.—The term “Indian Tribe”  
8 has the meaning given the term “Indian tribe” in  
9 section 4 of the Indian Self-Determination and Edu-  
10 cation Assistance Act (25 U.S.C. 5304).

11 (18) INFRASTRUCTURE.—The term “infrastruc-  
12 ture” means any system for safe drinking water,  
13 sewer collection, solid waste disposal, electricity gen-  
14 eration, communication, or transportation access (in-  
15 cluding highways, airports, marine terminals, rail  
16 systems, and residential roads) that is used to effec-  
17 tively and safely support—

- 18 (A) housing;
- 19 (B) an educational facility;
- 20 (C) a medical provider;
- 21 (D) a park or recreational facility; or
- 22 (E) a local business.

23 (19) LOCAL GOVERNMENT.—The term “local  
24 government” means—

1           (A) a county, municipality, city, town,  
2           township, local public authority, school district,  
3           special district, intrastate district, council of  
4           governments (regardless of whether the council  
5           of governments is incorporated as a nonprofit  
6           corporation under State law), regional or inter-  
7           state governmental entity, or agency or instru-  
8           mentality of a local government; or

9           (B) an Indian Tribe or authorized Tribal  
10          organization, or Alaska Native village or organi-  
11          zation, that is not a Tribal Government.

12          (20) LOW INCOME.—The term “low income”  
13          means an annual household income equal to, or less  
14          than, the greater of—

15               (A) an amount equal to 80 percent of the  
16               median income of the area in which the house-  
17               hold is located, as reported by the Department  
18               of Housing and Urban Development; and

19               (B) 200 percent of the Federal poverty  
20               line.

21          (21) LOW-INCOME COMMUNITY.—The term  
22          “low income community” means any census block  
23          group in which 30 percent or more of the population  
24          are individuals with low income.

1           (22) MEANINGFUL.—The term “meaningful”,  
2       with respect to involvement by the public in a deter-  
3       mination by a Federal agency, means that—

4           (A) potentially affected residents of a com-  
5       munity have an appropriate opportunity to par-  
6       ticipate in decisions regarding a proposed activ-  
7       ity that will affect the environment or public  
8       health of the community;

9           (B) the public contribution can influence  
10      the determination by the Federal agency;

11          (C) the concerns of all participants in-  
12      volved are taken into consideration in the deci-  
13      sion-making process; and

14          (D) the Federal agency—

15           (i) provides to potentially affected  
16      members of the public relevant and accu-  
17      rate information regarding the activity po-  
18      tentially affecting the environment or pub-  
19      lic health of affected members of the pub-  
20      lic; and

21           (ii) facilitates the involvement of po-  
22      tentially affected members of the public.

23          (23) POPULATION.—The term “population”  
24      means a census block group or series of geographi-  
25      cally contiguous blocks representing certain common

1 characteristics, such as (but not limited to) race,  
2 ethnicity, national origin, income-level, health dis-  
3 parities, or other public health and socioeconomic at-  
4 tributes.

5 (24) POPULATION OF COLOR.—The term “pop-  
6 ulation of color” means a population of individuals  
7 who identify as—

8 (A) Black;

9 (B) African American;

10 (C) Asian;

11 (D) Pacific Islander;

12 (E) another non-White race;

13 (F) Hispanic;

14 (G) Latino; or

15 (H) linguistically isolated.

16 (25) PUBLISH.—The term “publish” means to  
17 make publicly available in a form that is—

18 (A) generally accessible, including on the  
19 internet and in public libraries; and

20 (B) accessible for—

21 (i) individuals who are limited in  
22 English proficiency, in accordance with Ex-  
23 ecutive Order 13166 (65 Fed. Reg. 50121  
24 (August 16, 2000)); and

25 (ii) individuals with disabilities.



1           (26) STATE.—The term “State” means any  
2       State of the United States, the District of Columbia,  
3       the Commonwealth of Puerto Rico, the Virgin Is-  
4       lands, Guam, American Samoa, and the Common-  
5       wealth of the Northern Mariana Islands.

6           (27) TRIBAL GOVERNMENT.—The term “Tribal  
7       Government” means the governing body of an In-  
8       dian Tribe.

9           (28) WORKING GROUP.—The term “Working  
10      Group” means the interagency Federal Working  
11      Group on Environmental Justice convened under  
12      section 1–102 of Executive Order 12898 (42 U.S.C.  
13      4321 note), as amended by Executive Order 12948  
14      (60 Fed. Reg. 6381 (January 30, 1995)) and modi-  
15      fied by this title.

16 **SEC. 11002. ENVIRONMENTAL JUSTICE COMMUNITY TECH-**  
17 **NICAL ASSISTANCE GRANTS.**

18       (a) IN GENERAL.—The Administrator may award  
19      grants to eligible entities to enable such entities to partici-  
20      pate in decisions impacting the health and safety of their  
21      communities in connection with an actual or potential re-  
22      lease of a covered hazardous air pollutant.

23       (b) TIMING.—

24           (1) GUIDANCE.—Not later than 12 months  
25      after the date of enactment of this section, the Ad-

1        administrator shall publish guidance describing the  
2        process for eligible entities to apply for a grant  
3        under this section, including the required content  
4        and form of applications, the manner in which appli-  
5        cations must be submitted, and any applicable dead-  
6        lines.

7            (2) FIRST GRANT.—Not later than 180 days  
8        after the issuance of guidance under paragraph (1),  
9        the Administrator shall award the first grant under  
10       this section.

11       (c) ELIGIBLE ENTITY.—To be eligible for a grant  
12       under this section, an applicant shall be a group of individ-  
13       uals who reside in a community that—

14            (1) is a population of color, a community of  
15        color, a Tribal and indigenous community, or a low-  
16        income community; and

17            (2) is in close proximity to the site of an actual  
18        or potential release of a covered hazardous air pol-  
19        lutant.

20       (d) USE OF FUNDS.—An eligible entity receiving a  
21       grant under this section shall use the grant to participate  
22       in decisions impacting the health and safety of the commu-  
23       nity involved in connection with an actual or potential re-  
24       lease of a covered hazardous air pollutant, including—

1 (1) interpreting information with regard to the  
2 nature of the hazard, cumulative impacts studies,  
3 health impacts studies, remedial investigation and  
4 feasibility studies, agency decisions, remedial design,  
5 and operation and maintenance of necessary mon-  
6 itors; and

7 (2) performing additional air pollution moni-  
8 toring.

9 (e) LIMITATIONS ON AMOUNT; RENEWAL.—

10 (1) AMOUNT.—

11 (A) IN GENERAL.—The amount of a grant  
12 under this section (excluding any renewals of  
13 the grant) may not exceed \$50,000 for any  
14 grant recipient.

15 (B) EXCEPTION.—The Administrator may  
16 waive the limitation in subparagraph (A) with  
17 respect to an applicant in any case where the  
18 Administrator determines that such waiver is  
19 necessary for the community involved to obtain  
20 the necessary technical assistance.

21 (2) RENEWAL.—Grants may be renewed for  
22 each step in the regulatory, removal, or remediation  
23 process in connection with a facility with the poten-  
24 tial to release a covered hazardous air pollutant.

1 (f) DEFINITION OF COVERED HAZARDOUS AIR POL-  
2 LUTANT.—In this section, the term “covered hazardous  
3 air pollutant” means a hazardous air pollutant (as defined  
4 in section 112 of the Clean Air Act) that—

5 (1) is listed on the toxics release inventory  
6 under section 313(c) of the Emergency Planning  
7 and Community Right-To-Know Act of 1986; or

8 (2) is identified as carcinogenic by an assess-  
9 ment under the Integrated Risk Information System  
10 (IRIS) of the Environmental Protection Agency.

11 **SEC. 11003. INTERAGENCY FEDERAL WORKING GROUP ON**  
12 **ENVIRONMENTAL JUSTICE.**

13 (a) IN GENERAL.—Not later than 90 days after the  
14 date of enactment of this Act, the Administrator shall con-  
15 vene, as appropriate to carry out this section, the Working  
16 Group.

17 (b) REQUIREMENTS.—

18 (1) COMPOSITION.—The Working Group shall  
19 be comprised of the following (or a designee):

20 (A) The Secretary of Agriculture.

21 (B) The Secretary of Commerce.

22 (C) The Secretary of Defense.

23 (D) The Secretary of Energy.

24 (E) The Secretary of Health and Human  
25 Services.

1 (F) The Secretary of Homeland Security.

2 (G) The Secretary of Housing and Urban  
3 Development.

4 (H) The Secretary of the Interior.

5 (I) The Secretary of Labor.

6 (J) The Secretary of Transportation.

7 (K) The Attorney General.

8 (L) The Administrator.

9 (M) The Director of the Office of Environ-  
10 mental Justice.

11 (N) The Chairman of the Consumer Prod-  
12 uct Safety Commission.

13 (O) The Chairperson of the Chemical Safe-  
14 ty Board.

15 (P) The Director of the Office of Manage-  
16 ment and Budget.

17 (Q) The Director of the Office of Science  
18 and Technology Policy.

19 (R) The Chair of the Council on Environ-  
20 mental Quality.

21 (S) The Assistant to the President for Do-  
22 mestic Policy.

23 (T) The Director of the National Economic  
24 Council.

1 (U) The Chairman of the Council of Eco-  
2 nomic Advisers.

3 (V) The Secretary of Education;

4 (W) The Deputy Assistant to the President  
5 for Environmental Policy;

6 (X) The Director of the National Institutes  
7 of Health;

8 (Y) The Director of the National Park  
9 Service;

10 (Z) The Assistant Secretary of the Bureau  
11 of Indian Affairs;

12 (AA) The Chairperson of the National En-  
13 vironmental Justice Advisory Council; and

14 (BB) Such other Federal officials as the  
15 President may designate.

16 (2) FUNCTIONS.—The Working Group shall—

17 (A) report to the President through the  
18 Chair of the Council on Environmental Quality;

19 (B) provide guidance to Federal agencies  
20 regarding criteria for identifying disproportion-  
21 ately high and adverse human health or envi-  
22 ronmental effects—

23 (i) on populations of color, commu-  
24 nities of color, Tribal and indigenous com-

1 communities, and low-income communities;  
2 and

3 (ii) on the basis of race, color, na-  
4 tional origin, or income;

5 (C) coordinate with, provide guidance to,  
6 and serve as a clearinghouse for, each Federal  
7 agency with respect to the implementation and  
8 updating of an environmental justice strategy  
9 required under this title, in order to ensure that  
10 the administration, interpretation, and enforce-  
11 ment of programs, activities, and policies are  
12 carried out in a consistent manner;

13 (D) assist in coordinating research by, and  
14 stimulating cooperation among, the Environ-  
15 mental Protection Agency, the Department of  
16 Health and Human Services, the Department of  
17 Housing and Urban Development, and other  
18 Federal agencies conducting research or other  
19 activities in accordance with this title;

20 (E) identify, based in part on public rec-  
21 ommendations contained in Federal agency  
22 progress reports, important areas for Federal  
23 agencies to take into consideration and address,  
24 as appropriate, in environmental justice strate-  
25 gies and other efforts;

1 (F) assist in coordinating data collection  
2 and maintaining and updating appropriate  
3 databases, as required by this title;

4 (G) examine existing data and studies re-  
5 lating to environmental justice;

6 (H) hold public meetings and otherwise so-  
7 licit public participation under paragraph (3);  
8 and

9 (I) develop interagency model projects re-  
10 lating to environmental justice that demonstrate  
11 cooperation among Federal agencies.

12 (3) PUBLIC PARTICIPATION.—The Working  
13 Group shall—

14 (A) hold public meetings or otherwise so-  
15 licit public participation and community-based  
16 science for the purpose of fact-finding with re-  
17 spect to the implementation of this title; and

18 (B) prepare for public review and publish  
19 a summary of any comments and recommenda-  
20 tions provided.

21 (c) JUDICIAL REVIEW AND RIGHTS OF ACTION.—

22 Any person may commence a civil action—

23 (1) to seek relief from, or to compel, an agency  
24 action under this section (including regulations pro-  
25 mulgated pursuant to this section); or



1           (2) otherwise to ensure compliance with this  
2       section (including regulations promulgated pursuant  
3       to this section).

4   **SEC. 11004. FEDERAL AGENCY ACTIONS TO ADDRESS ENVI-**  
5                   **RONMENTAL JUSTICE.**

6       (a) FEDERAL AGENCY RESPONSIBILITIES.—

7           (1) ENVIRONMENTAL JUSTICE MISSION.—To  
8       the maximum extent practicable and permitted by  
9       applicable law, each Federal agency shall make  
10      achieving environmental justice part of the mission  
11      of the Federal agency by identifying, addressing,  
12      and mitigating disproportionately high and adverse  
13      human health or environmental effects of the pro-  
14      grams, policies, and activities of the Federal agency  
15      on populations of color, communities of color, Tribal  
16      and indigenous communities, and low-income com-  
17      munities in the United States (including the terri-  
18      tories and possessions of the United States and the  
19      District of Columbia).

20           (2) NONDISCRIMINATION.—Each Federal agen-  
21      cy shall conduct any program, policy, or activity that  
22      substantially affects human health or the environ-  
23      ment in a manner that ensures that the program,  
24      policy, or activity does not have the effect of exclud-  
25      ing any individual or group from participation in,

1 denying any individual or group the benefits of, or  
2 subjecting any individual or group to discrimination  
3 under, the program, policy, or activity because of  
4 race, color, or national origin.

5 (3) STRATEGIES.—

6 (A) AGENCYWIDE STRATEGIES.—Each  
7 Federal agency shall implement and update, not  
8 less frequently than annually, an agencywide  
9 environmental justice strategy that identifies  
10 and includes strategies to address  
11 disproportionately high and adverse human  
12 health or environmental effects of the pro-  
13 grams, policies, spending, and other activities of  
14 the Federal agency with respect to populations  
15 of color, communities of color, Tribal and indig-  
16 enous communities, and low-income commu-  
17 nities, including, as appropriate for the mission  
18 of the Federal agency, with respect to the fol-  
19 lowing areas:

20 (i) Implementation of the National  
21 Environmental Policy Act of 1969 (42  
22 U.S.C. 4321 et seq.).

23 (ii) Implementation of title VI of the  
24 Civil Rights Act of 1964 (42 U.S.C. 2000d

1 et seq.) (including regulations promulgated  
2 pursuant to that title).

3 (iii) Implementation of the Robert T.  
4 Stafford Disaster Relief and Emergency  
5 Assistance Act (42 U.S.C. 5121 et seq.).

6 (iv) Impacts from the lack of infra-  
7 structure, or from deteriorated infrastruc-  
8 ture.

9 (v) Impacts from land use.

10 (vi) Impacts from climate change.

11 (vii) Impacts from commercial trans-  
12 portation.

13 (viii) Strategies for the implementa-  
14 tion of agency programs, policies, and ac-  
15 tivities to provide for—

16 (I) equal protection from environ-  
17 mental and health hazards for popu-  
18 lations of color, communities of color,  
19 Tribal and indigenous communities,  
20 and low-income communities;

21 (II) equal opportunity for public  
22 involvement and due process to popu-  
23 lations of color, communities of color,  
24 Tribal and indigenous communities,  
25 and low-income communities in the

1 development, implementation, and en-  
2 forcement of agency programs, poli-  
3 cies, and activities;

4 (III) improved technical assist-  
5 ance and access to information to  
6 populations of color, communities of  
7 color, Tribal and indigenous commu-  
8 nities, and low-income communities  
9 regarding the impacts of agency pro-  
10 grams, policies, and activities on envi-  
11 ronmental justice communities;

12 (IV) improved agency cooperation  
13 with State governments, Tribal Gov-  
14 ernments, and local governments to  
15 address pollution and public health  
16 burdens for populations of color, com-  
17 munities of color, Tribal and indige-  
18 nous communities, and low-income  
19 communities.

20 (B) REVISIONS.—

21 (i) IN GENERAL.—Each strategy de-  
22 veloped and updated pursuant to subpara-  
23 graph (A) shall identify programs, policies,  
24 planning and public participation proc-  
25 esses, rulemaking, agency spending, and

1 enforcement activities relating to human  
2 health or the environment that may be re-  
3 vised, at a minimum—

4 (I) to promote enforcement of all  
5 health, environmental, and civil rights  
6 laws and regulations in areas con-  
7 taining populations of color, commu-  
8 nities of color, Tribal and indigenous  
9 communities, and low-income commu-  
10 nities;

11 (II) to ensure greater public par-  
12 ticipation;

13 (III) to provide increased access  
14 to infrastructure;

15 (IV) to improve research and  
16 data collection relating to the health  
17 and environment of populations of  
18 color, communities of color, Tribal  
19 and indigenous communities, and low-  
20 income communities, including  
21 through the increased use of commu-  
22 nity-based science; and

23 (V) to identify differential pat-  
24 terns of use of natural resources  
25 among populations of color, commu-

1 nities of color, Tribal and indigenous  
2 communities, and low-income commu-  
3 nities.

4 (ii) TIMETABLES.—Each strategy im-  
5 plemented and updated pursuant to sub-  
6 paragraph (A) shall include a timetable for  
7 undertaking revisions identified pursuant  
8 to clause (i).

9 (C) PROGRESS REPORTS.—Not later than  
10 1 year after the date of enactment of this Act,  
11 and not less frequently than once every 5 years  
12 thereafter, each Federal agency shall submit to  
13 Congress and the Working Group, and shall  
14 publish, a progress report that includes, with  
15 respect to the period covered by the report—

16 (i) a description of the current envi-  
17 ronmental justice strategy of the Federal  
18 agency;

19 (ii) an evaluation of the progress  
20 made by the Federal agency at national  
21 and regional levels regarding implementa-  
22 tion of the environmental justice strategy,  
23 including—

24 (I) metrics used by the Federal  
25 agency to measure performance; and

1 (II) the progress made by the  
2 Federal agency toward—

3 (aa) the achievement of the  
4 metrics described in subclause  
5 (I); and

6 (bb) mitigating identified in-  
7 stances of environmental injus-  
8 tice;

9 (iii) a description of the participation  
10 by the Federal agency in interagency col-  
11 laboration;

12 (iv) responses to recommendations  
13 submitted by members of the public to the  
14 Federal agency relating to the environ-  
15 mental justice strategy of the Federal  
16 agency and the implementation by the  
17 Federal agency of this title; and

18 (v) any updates or revisions to the en-  
19 vironmental justice strategy of the Federal  
20 agency, including those resulting from pub-  
21 lic comments.

22 (4) PUBLIC PARTICIPATION.—Each Federal  
23 agency shall—

24 (A) ensure that meaningful opportunities  
25 exist for the public to submit comments and

1 recommendations relating to the environmental  
2 justice strategy, progress reports, and ongoing  
3 efforts of the Federal agency to incorporate en-  
4 vironmental justice principles into the pro-  
5 grams, policies, and activities of the Federal  
6 agency;

7 (B) hold public meetings or otherwise so-  
8 licit public participation and community-based  
9 science from populations of color, communities  
10 of color, Tribal and indigenous communities,  
11 and low-income communities for fact-finding,  
12 receiving public comments, and conducting in-  
13 quiries concerning environmental justice; and

14 (C) prepare for public review and publish  
15 a summary of the comments and recommenda-  
16 tions provided.

17 (5) ACCESS TO INFORMATION.—Each Federal  
18 agency shall—

19 (A) publish public documents, notices, and  
20 hearings relating to the programs, policies, and  
21 activities of the Federal agency that affect  
22 human health or the environment; and

23 (B) translate and publish any public docu-  
24 ments, notices, and hearings relating to an ac-  
25 tion of the Federal agency as appropriate for



1 the affected population, specifically in any case  
2 in which a limited English-speaking population  
3 may be disproportionately affected by that ac-  
4 tion.

5 (6) CODIFICATION OF GUIDANCE.—

6 (A) COUNCIL ON ENVIRONMENTAL QUAL-  
7 ITY.—Notwithstanding any other provision of  
8 law, sections II and III of the guidance issued  
9 by the Council on Environmental Quality enti-  
10 tled “Environmental Justice Guidance Under  
11 the National Environmental Policy Act” and  
12 dated December 10, 1997, are enacted into law.

13 (B) ENVIRONMENTAL PROTECTION AGEN-  
14 CY.—Notwithstanding any other provision of  
15 law, the guidance issued by the Environmental  
16 Protection Agency entitled “EPA Policy on  
17 Consultation and Coordination with Indian  
18 Tribes: Guidance for Discussing Tribal Treaty  
19 Rights” and dated February 2016 is enacted  
20 into law.

21 (b) HUMAN HEALTH AND ENVIRONMENTAL RE-  
22 SEARCH, DATA COLLECTION, AND ANALYSIS.—

23 (1) RESEARCH.—Each Federal agency, to the  
24 maximum extent practicable and permitted by appli-  
25 cable law, shall—

1 (A) in conducting environmental or human  
2 health research, include diverse segments of the  
3 population in epidemiological and clinical stud-  
4 ies, including segments at high risk from envi-  
5 ronmental hazards, such as—

6 (i) populations of color, communities  
7 of color, Tribal and indigenous commu-  
8 nities, populations with low income, and  
9 low-income communities;

10 (ii) fenceline communities; and

11 (iii) workers who may be exposed to  
12 substantial environmental hazards;

13 (B) in conducting environmental or human  
14 health analyses, identify multiple and cumu-  
15 lative exposures; and

16 (C) actively encourage and solicit commu-  
17 nity-based science, and provide to populations  
18 of color, communities of color, Tribal and indig-  
19 enous communities, populations with low in-  
20 come, and low income communities the oppor-  
21 tunity to comment regarding the development  
22 and design of research strategies carried out  
23 pursuant to this title.

24 (2) DISPROPORTIONATE IMPACT.—To the max-  
25 imum extent practicable and permitted by applicable

1 law (including section 552a of title 5, United States  
2 Code (commonly known as the Privacy Act)), each  
3 Federal agency shall—

4 (A) collect, maintain, and analyze informa-  
5 tion assessing and comparing environmental  
6 and human health risks borne by populations  
7 identified by race, national origin, or income;  
8 and

9 (B) use that information to determine  
10 whether the programs, policies, and activities of  
11 the Federal agency have disproportionately high  
12 and adverse human health or environmental ef-  
13 fects on populations of color, communities of  
14 color, Tribal and indigenous communities, and  
15 low-income communities.

16 (3) INFORMATION RELATING TO NON-FEDERAL  
17 FACILITIES.—In connection with the implementation  
18 of Federal agency strategies under subsection (a)(3),  
19 each Federal agency, to the maximum extent prac-  
20 ticable and permitted by applicable law, shall collect,  
21 maintain, and analyze information relating to the  
22 race, national origin, and income level, and other  
23 readily accessible and appropriate information, for  
24 fenceline communities in proximity to any facility or  
25 site expected to have a substantial environmental,

1 human health, or economic effect on the surrounding  
2 populations, if the facility or site becomes the sub-  
3 ject of a substantial Federal environmental adminis-  
4 trative or judicial action.

5 (4) IMPACT FROM FEDERAL FACILITIES.—Each  
6 Federal agency, to the maximum extent practicable  
7 and permitted by applicable law, shall collect, main-  
8 tain, and analyze information relating to the race,  
9 national origin, and income level, and other readily  
10 accessible and appropriate information, for fenceline  
11 communities in proximity to any facility of the Fed-  
12 eral agency that is—

13 (A) subject to the reporting requirements  
14 under the Emergency Planning and Community  
15 Right-To-Know Act of 1986 (42 U.S.C. 11001  
16 et seq.), as required by Executive Order 12898  
17 (42 U.S.C. 4321 note); and

18 (B) expected to have a substantial environ-  
19 mental, human health, or economic effect on  
20 surrounding populations.

21 (c) CONSUMPTION OF FISH AND WILDLIFE.—

22 (1) IN GENERAL.—Each Federal agency shall  
23 develop, publish (unless prohibited by law), and re-  
24 vise, as practicable and appropriate, guidance on ac-  
25 tions of the Federal agency that will impact fish and

1 wildlife consumed by populations that principally  
2 rely on fish or wildlife for subsistence.

3 (2) REQUIREMENT.—The guidance described in  
4 paragraph (1) shall—

5 (A) reflect the latest scientific information  
6 available concerning methods for evaluating the  
7 human health risks associated with the con-  
8 sumption of pollutant-bearing fish or wildlife;  
9 and

10 (B) publish the risks of such consumption  
11 patterns.

12 (d) MAPPING AND SCREENING TOOL.—The Adminis-  
13 trator shall continue to make available to the public an  
14 environmental justice mapping and screening tool (such  
15 as EJScreen or an equivalent tool) that includes, at a min-  
16 imum, the following features:

17 (1) Nationally consistent data.

18 (2) Environmental data.

19 (3) Demographic data, including data relating  
20 to race, ethnicity, and income.

21 (4) Capacity to produce maps and reports by  
22 geographical area.

23 (5) Data on national parks and other federally  
24 protected natural, historic, and cultural sites.

1 (e) JUDICIAL REVIEW AND RIGHTS OF ACTION.—

2 Any person may commence a civil action—

3 (1) to seek relief from, or to compel, an agency  
4 action under this section (including regulations pro-  
5 mulgated pursuant to this section); or

6 (2) otherwise to ensure compliance with this  
7 section (including regulations promulgated pursuant  
8 to this section).

9 (f) INFORMATION SHARING.—In carrying out this  
10 section, each Federal agency, to the maximum extent  
11 practicable and permitted by applicable law, shall share  
12 information and eliminate unnecessary duplication of ef-  
13 forts through the use of existing data systems and cooper-  
14 ative agreements among Federal agencies and with State,  
15 local, and Tribal governments.

16 **SEC. 11005. TRAINING OF EMPLOYEES OF FEDERAL AGEN-**  
17 **CIES.**

18 (a) INITIAL TRAINING.—Not later than 1 year after  
19 the date of enactment of this Act, each employee of the  
20 Department of Energy and the Environmental Protection  
21 Agency shall complete an environmental justice training  
22 program to ensure that each such employee—

23 (1) has received training in environmental jus-  
24 tice; and

25 (2) is capable of—

1 (A) appropriately incorporating environ-  
2 mental justice concepts into the daily activities  
3 of the employee; and

4 (B) increasing the meaningful participation  
5 of individuals from environmental justice com-  
6 munities in the activities of the applicable agen-  
7 cy.

8 (b) MANDATORY PARTICIPATION.—Effective on the  
9 date that is 1 year after the date of enactment of this  
10 Act, each individual hired by the Department of Energy  
11 and the Environmental Protection Agency after that date  
12 shall be required to participate in environmental justice  
13 training.

14 (c) REQUIREMENT RELATING TO CERTAIN EMPLOY-  
15 EES.—

16 (1) IN GENERAL.—With respect to each Fed-  
17 eral agency that participates in the Working Group,  
18 not later than 30 days after the date on which an  
19 individual is appointed to the position of environ-  
20 mental justice coordinator, or any other position the  
21 responsibility of which involves the conduct of envi-  
22 ronmental justice activities, the individual shall be  
23 required to possess documentation of the completion  
24 by the individual of environmental justice training.

1           (3) EVALUATION.—Not later than 3 years after  
2       the date of enactment of this Act, the Inspector  
3       General of each Federal agency that participates in  
4       the Working Group shall evaluate the training pro-  
5       grams of such Federal agency to determine if such  
6       Federal agency has improved the rate of training of  
7       the employees of such Federal agency to ensure that  
8       each employee has received environmental justice  
9       training.

10 **SEC. 11006. ENVIRONMENTAL JUSTICE BASIC TRAINING**  
11 **PROGRAM.**

12       (a) ESTABLISHMENT.—The Administrator shall es-  
13       tablish a basic training program, in coordination and con-  
14       sultation with nongovernmental environmental justice or-  
15       ganizations, to increase the capacity of residents of envi-  
16       ronmental justice communities to identify and address dis-  
17       proportionately adverse human health or environmental ef-  
18       fects by providing culturally and linguistically appro-  
19       priate—

20           (1) training and education relating to—

21                (A) basic and advanced techniques for the  
22                detection, assessment, and evaluation of the ef-  
23                fects of hazardous substances on human health;

24                (B) methods to assess the risks to human  
25                health presented by hazardous substances;



1 (C) methods and technologies to detect  
2 hazardous substances in the environment;

3 (D) basic biological, chemical, and physical  
4 methods to reduce the quantity and toxicity of  
5 hazardous substances;

6 (E) the rights and safeguards currently af-  
7 forded to individuals through policies and laws  
8 intended to help environmental justice commu-  
9 nities address disparate impacts and discrimi-  
10 nation, including—

11 (i) laws adopted to protect human  
12 health and the environment; and

13 (ii) section 602 of the Civil Rights Act  
14 of 1964 (42 U.S.C. 2000d–1);

15 (F) public engagement opportunities  
16 through the policies and laws described in sub-  
17 paragraph (E);

18 (G) materials available on the Clearing-  
19 house described in section 11007;

20 (H) methods to expand access to parks  
21 and other natural and recreational amenities;  
22 and

23 (I) finding and applying for Federal grants  
24 related to environmental justice; and

1           (2) short courses and continuation education  
2           programs for residents of communities who are lo-  
3           cated in close proximity to hazardous substances to  
4           provide—

5                   (A) education relating to—

6                           (i) the proper manner to handle haz-  
7                           ardous substances;

8                           (ii) the management of facilities at  
9                           which hazardous substances are located  
10                          (including facility compliance protocols);  
11                          and

12                          (iii) the evaluation of the hazards that  
13                          facilities described in clause (ii) pose to  
14                          human health; and

15                   (B) training on environmental and occupa-  
16                   tional health and safety with respect to the pub-  
17                   lic health and engineering aspects of hazardous  
18                   waste control.

19           (b) GRANT PROGRAM.—

20                   (1) ESTABLISHMENT.—In carrying out the  
21                   basic training program established under subsection  
22                   (a), the Administrator may provide grants to, or  
23                   enter into any contract or cooperative agreement  
24                   with, an eligible entity to carry out any training or  
25                   educational activity described in subsection (a).

1           (2) ELIGIBLE ENTITY.—To be eligible to receive  
2       assistance under paragraph (1), an eligible entity  
3       shall be an accredited institution of education in  
4       partnership with—

5           (A) a community-based organization that  
6       carries out activities relating to environmental  
7       justice;

8           (B) a generator of hazardous waste;

9           (C) any individual who is involved in the  
10      detection, assessment, evaluation, or treatment  
11      of hazardous waste;

12          (D) any owner or operator of a facility at  
13      which hazardous substances are located; or

14          (E) any State government, Tribal Govern-  
15      ment, or local government.

16      (c) PLAN.—

17          (1) IN GENERAL.—Not later than 2 years after  
18      the date of enactment of this Act, the Administrator,  
19      in consultation with the Director, shall develop and  
20      publish in the Federal Register a plan to carry out  
21      the basic training program established under sub-  
22      section (a).

23          (2) CONTENTS.—The plan described in para-  
24      graph (1) shall contain—

1 (A) a list that describes the relative pri-  
2 ority of each activity described in subsection  
3 (a); and

4 (B) a description of research and training  
5 relevant to environmental justice issues of com-  
6 munities adversely affected by pollution.

7 (3) COORDINATION WITH FEDERAL AGEN-  
8 CIES.—The Administrator shall, to the maximum ex-  
9 tent practicable, take appropriate steps to coordinate  
10 the activities of the basic training program described  
11 in the plan with the activities of other Federal agen-  
12 cies to avoid any duplication of effort.

13 (d) REPORT.—

14 (1) IN GENERAL.—Not later than 2 years after  
15 the date of enactment of this Act, and every 2 years  
16 thereafter, the Administrator shall submit to the  
17 Committees on Energy and Commerce and Natural  
18 Resources of the House of Representative and the  
19 Committees on Environment and Public Works and  
20 Energy and Natural Resources of the Senate a re-  
21 port describing—

22 (A) the implementation of the basic train-  
23 ing program established under subsection (a);  
24 and

1 (B) the impact of the basic training pro-  
2 gram on improving training opportunities for  
3 residents of environmental justice communities.

4 (2) PUBLIC AVAILABILITY.—The Administrator  
5 shall make the report required under paragraph (1)  
6 available to the public (including by posting a copy  
7 of the report on the website of the Environmental  
8 Protection Agency).

9 (e) AUTHORIZATION OF APPROPRIATIONS.—There is  
10 authorized to be appropriated to carry out this section  
11 \$10,000,000 for each of fiscal years 2021 through 2025.

12 **SEC. 11007. JUSTICE CLEARINGHOUSE.**

13 (a) ESTABLISHMENT.—Not later than 1 year after  
14 the date of enactment of this Act, the Administrator shall  
15 establish a public internet-based clearinghouse, to be  
16 known as the Environmental Justice Clearinghouse.

17 (b) CONTENTS.—The Clearinghouse shall be com-  
18 prised of culturally and linguistically appropriate mate-  
19 rials related to environmental justice, including—

20 (1) information describing the activities con-  
21 ducted by the Environmental Protection Agency to  
22 address issues relating to environmental justice;

23 (2) copies of training materials provided by the  
24 Administrator to help individuals and employees un-

1       derstand and carry out environmental justice activi-  
2       ties;

3           (3) links to web pages that describe environ-  
4       mental justice activities of other Federal agencies;

5           (4) a directory of individuals who possess tech-  
6       nical expertise in issues relating to environmental  
7       justice;

8           (5) a directory of nonprofit and community-  
9       based organizations, including grassroots organiza-  
10      tions led by people of color, that address issues re-  
11      lating to environmental justice at the local, State,  
12      and Federal levels (with particular emphasis given to  
13      nonprofit and community-based organizations that  
14      possess the capability to provide advice or technical  
15      assistance to environmental justice communities);  
16      and

17          (6) any other appropriate information as deter-  
18      mined by the Administrator, including information  
19      on any resources available to help address the dis-  
20      proportionate burden of adverse human health or en-  
21      vironmental effects on environmental justice commu-  
22      nities.

23      (c) CONSULTATION.—In developing the Clearing-  
24      house, the Administrator shall consult with individuals  
25      representing academic and community-based organiza-

1 tions who have expertise in issues relating to environ-  
2 mental justice.

3 (d) ANNUAL REVIEW.—The Advisory Council shall—

4 (1) conduct a review of the Clearinghouse on an  
5 annual basis; and

6 (2) recommend to the Administrator any up-  
7 dates for the clearinghouse that the Advisory Coun-  
8 cil determines to be necessary for the effective oper-  
9 ation of the Clearinghouse.

10 **SEC. 11008. PUBLIC MEETINGS.**

11 (a) IN GENERAL.—Not later than 2 years after the  
12 date of enactment of this Act, and biennially thereafter,  
13 the Administrator shall hold public meetings on environ-  
14 mental justice issues in each region of the Environmental  
15 Protection Agency to gather public input with respect to  
16 the implementation and updating of environmental justice  
17 strategies and efforts of the Environmental Protection  
18 Agency.

19 (b) OUTREACH TO ENVIRONMENTAL JUSTICE COM-  
20 MUNITIES.—The Administrator, in advance of the meet-  
21 ings described in subsection (a), shall to the extent prac-  
22 ticable hold multiple meetings in environmental justice  
23 communities in each region to provide meaningful commu-  
24 nity involvement opportunities.

1 (c) NOTICE.—Notice for the meetings described in  
2 subsections (a) and (b) shall be provided—

3 (1) to applicable representative entities or orga-  
4 nizations present in the environmental justice com-  
5 munity including—

6 (A) local religious organizations;

7 (B) civic associations and organizations;

8 (C) business associations of people of color;

9 (D) environmental and environmental jus-  
10 tice organizations;

11 (E) homeowners', tenants', and neighbor-  
12 hood watch groups;

13 (F) local and Tribal Governments;

14 (G) rural cooperatives;

15 (H) business and trade organizations;

16 (I) community and social service organiza-  
17 tions;

18 (J) universities, colleges, and vocational  
19 schools;

20 (K) labor organizations;

21 (L) civil rights organizations;

22 (M) senior citizens' groups; and

23 (N) public health agencies and clinics;

24 (2) through communication methods that are  
25 accessible in the applicable environmental justice



1 community, which may include electronic media,  
2 newspapers, radio, and other media particularly tar-  
3 geted at communities of color, low-income commu-  
4 nities, and Tribal and indigenous communities; and  
5 (3) at least 30 days before any such meeting.

6 (d) COMMUNICATION METHODS AND REQUIRE-  
7 MENTS.—The Administrator shall—

8 (1) provide translations of any documents made  
9 available to the public pursuant to this section in  
10 any language spoken by more than 5 percent of the  
11 population residing within the applicable environ-  
12 mental justice community, and make available trans-  
13 lation services for meetings upon request; and

14 (2) not require members of the public to  
15 produce a form of identification or register their  
16 names, provide other information, complete a ques-  
17 tionnaire, or otherwise fulfill any condition precedent  
18 to attending a meeting, but if an attendance list,  
19 register, questionnaire, or other similar document is  
20 utilized during meetings, it shall state clearly that  
21 the signing, registering, or completion of the docu-  
22 ment is voluntary.

23 (e) REQUIRED ATTENDANCE OF CERTAIN EMPLOY-  
24 EES.—In holding a public meeting under subsection (a),  
25 the Administrator shall ensure that at least 1 employee

1 of the Environmental Protection Agency at the level of As-  
2 sistant Administrator is present at the meeting to serve  
3 as a representative of the Environmental Protection Agen-  
4 cy.

5 **SEC. 11009. NATIONAL ENVIRONMENTAL JUSTICE ADVI-**  
6 **SORY COUNCIL.**

7 (a) ESTABLISHMENT.—The President shall establish  
8 an advisory council, to be known as the National Environ-  
9 mental Justice Advisory Council.

10 (b) MEMBERSHIP.—The Advisory Council shall be  
11 comprised of 26 members who have knowledge of, or expe-  
12 rience relating to, the effect of environmental conditions  
13 on communities of color, low-income communities, and  
14 Tribal and indigenous communities, including—

15 (1) representatives of—

16 (A) community-based organizations that  
17 carry out initiatives relating to environmental  
18 justice, including grassroots organizations led  
19 by people of color;

20 (B) State governments, Tribal Govern-  
21 ments, and local governments;

22 (C) Indian Tribes and other indigenous  
23 groups;

24 (D) nongovernmental and environmental  
25 organizations; and

1 (E) private sector organizations (including  
2 representatives of industries and businesses);  
3 and

4 (2) experts in the fields of—

5 (A) socioeconomic analysis;

6 (B) health and environmental effects;

7 (C) exposure evaluation;

8 (D) environmental law and civil rights law;

9 and

10 (E) environmental health science research.

11 (c) SUBCOMMITTEES; WORKGROUPS.—

12 (1) ESTABLISHMENT.—The Advisory Council  
13 may establish any subcommittee or workgroup to as-  
14 sist the Advisory Council in carrying out any duty  
15 of the Advisory Council described in subsection (d).

16 (2) REPORT.—Upon the request of the Advisory  
17 Council, each subcommittee or workgroup estab-  
18 lished by the Advisory Council under paragraph (1)  
19 shall submit to the Advisory Council a report that  
20 contains—

21 (A) a description of each recommendations  
22 of the subcommittee or workgroup; and

23 (B) any advice requested by the Advisory  
24 Council with respect to any duty of the Advi-  
25 sory Council.

1 (d) DUTIES.—The Advisory Council shall provide  
2 independent advice and recommendations to the Environ-  
3 mental Protection Agency with respect to issues relating  
4 to environmental justice, including advice—

5 (1) to help develop, facilitate, and conduct re-  
6 views of the direction, criteria, scope, and adequacy  
7 of the scientific research and demonstration projects  
8 of the Environmental Protection Agency relating to  
9 environmental justice;

10 (2) to improve participation, cooperation, and  
11 communication with respect to such issues—

12 (A) within the Environmental Protection  
13 Agency;

14 (B) between, and among, the Environ-  
15 mental Protection Agency and Federal agencies,  
16 State and local governments, Indian Tribes, en-  
17 vironmental justice leaders, interest groups, and  
18 the public;

19 (3) requested by the Administrator to help im-  
20 prove the response of the Environmental Protection  
21 Agency in securing environmental justice for com-  
22 munities of color, low-income communities, and  
23 Tribal and Indigenous communities; and

24 (4) on issues relating to—

1 (A) the developmental framework of the  
2 Environmental Protection Agency with respect  
3 to the integration by the Environmental Protec-  
4 tion Agency of socioeconomic programs into the  
5 strategic planning, annual planning, and man-  
6 agement accountability of the Environmental  
7 Protection Agency to achieve environmental jus-  
8 tice results throughout the Environmental Pro-  
9 tection Agency;

10 (B) the measurement and evaluation of the  
11 progress, quality, and adequacy of the Environ-  
12 mental Protection Agency in planning, devel-  
13 oping, and implementing environmental justice  
14 strategies, project, and programs;

15 (C) any existing and future information  
16 management systems, technologies, and data  
17 collection activities of the Environmental Pro-  
18 tection Agency (including recommendations to  
19 conduct analyses that support and strengthen  
20 environmental justice programs in administra-  
21 tive and scientific areas);

22 (D) the administration of grant programs  
23 relating to environmental justice assistance; and

24 (E) education, training, and other outreach  
25 activities conducted by the Environmental Pro-

1           tection Agency relating to environmental jus-  
2           tice.

3           (e) DESIGNATED FEDERAL OFFICER.—The Director  
4 of the Office of Environmental Justice of the Environ-  
5 mental Protection Agency is designated as the Federal of-  
6 ficer required under section 10(e) of the Federal Advisory  
7 Committee Act (5 U.S.C. App.) for the Advisory Council.

8           (f) MEETINGS.—

9           (1) IN GENERAL.—The Advisory Council shall  
10 meet not less frequently than 3 times each calendar  
11 year.

12           (2) OPEN TO PUBLIC.—Each meeting of the  
13 Advisory Council shall be held open to the public.

14           (3) DUTIES OF DESIGNATED FEDERAL OFFI-  
15 CER.—The designated Federal officer described in  
16 subsection (e) (or a designee) shall—

17                   (A) be present at each meeting of the Ad-  
18 visory Council;

19                   (B) ensure that each meeting is conducted  
20 in accordance with an agenda approved in ad-  
21 vance by the designated Federal officer;

22                   (C) provide an opportunity for interested  
23 persons—

24                           (i) to file comments before or after  
25 each meeting of the Advisory Council; or

1 (ii) to make statements at such a  
2 meeting, to the extent that time permits;

3 (D) ensure that a representative of the  
4 Working Group and a high-level representative  
5 from each regional office of the Environmental  
6 Protection Agency are invited to, and encour-  
7 aged to attend, each meeting of the Advisory  
8 Council; and

9 (E) provide technical assistance to States  
10 seeking to establish State-level environmental  
11 justice advisory councils or implement other en-  
12 vironmental justice policies or programs.

13 (g) RESPONSES FROM ADMINISTRATOR.—

14 (1) PUBLIC COMMENT INQUIRIES.—The Admin-  
15 istrator shall provide a written response to each in-  
16 quiry submitted to the Administrator by a member  
17 of the public before or after each meeting of the Ad-  
18 visory Council by not later than 120 days after the  
19 date of submission.

20 (2) RECOMMENDATIONS FROM ADVISORY COUN-  
21 CIL.—The Administrator shall provide a written re-  
22 sponse to each recommendation submitted to the Ad-  
23 ministrator by the Advisory Council by not later  
24 than 120 days after the date of submission.

1 (h) TRAVEL EXPENSES.—A member of the Advisory  
2 Council may be allowed travel expenses, including per  
3 diem in lieu of subsistence, at such rate as the Adminis-  
4 trator determines to be appropriate while away from the  
5 home or regular place of business of the member in the  
6 performance of the duties of the Advisory Council.

7 (i) DURATION.—The Advisory Council shall remain  
8 in existence unless otherwise provided by law.

9 **SEC. 11010. ENVIRONMENTAL JUSTICE GRANT PROGRAMS.**

10 (a) IN GENERAL.—The Administrator shall continue  
11 to carry out the Environmental Justice Small Grants Pro-  
12 gram and the Environmental Justice Collaborative Prob-  
13 lem-Solving Cooperative Agreement Program, as those  
14 programs are in existence on the date of enactment of this  
15 Act.

16 (b) CARE GRANTS.—The Administrator shall con-  
17 tinue to carry out the Community Action for a Renewed  
18 Environment grant programs I and II, as in existence on  
19 January 1, 2012.

20 (c) AUTHORIZATION OF APPROPRIATIONS.—There is  
21 authorized to be appropriated to carry out the programs  
22 described in subsections (a) and (b) \$10,000,000 for each  
23 of fiscal years 2021 through 2030.



1 **SEC. 11011. ENVIRONMENTAL JUSTICE COMMUNITY SOLID**  
2 **WASTE DISPOSAL TECHNICAL ASSISTANCE**  
3 **GRANTS.**

4 (a) IN GENERAL.—The Administrator may award  
5 grants to eligible entities to enable such entities to partici-  
6 pate in decisions impacting the health and safety of their  
7 communities relating to the permitting or permit renewal  
8 of a solid waste disposal facility or hazardous waste facil-  
9 ity.

10 (b) TIMING.—

11 (1) GUIDANCE.—Not later than 12 months  
12 after the date of enactment of this section, the Ad-  
13 ministrator shall publish guidance describing the  
14 process for eligible entities to apply for a grant  
15 under this section, including the required content  
16 and form of applications, the manner in which appli-  
17 cations must be submitted, and any applicable dead-  
18 lines.

19 (2) FIRST GRANT.—Not later than 180 days  
20 after the issuance of guidance under paragraph (1),  
21 the Administrator shall award the first grant under  
22 this section.

23 (c) ELIGIBLE ENTITY.—To be eligible for a grant  
24 under this section, an applicant shall be a group of individ-  
25 uals who reside in a community that—

1           (1) is a population of color, a community of  
2           color, a Tribal and indigenous community, or a low-  
3           income community; and

4           (2) is in close proximity to a facility described  
5           in subsection (a) for which a decision relating to a  
6           permit or permit renewal for such facility is re-  
7           quired.

8           (d) USE OF FUNDS.—An eligible entity receiving a  
9           grant under this section shall use the grant to participate  
10          in decisions impacting the health and safety of the commu-  
11          nity involved that are related to the permitting or permit  
12          renewal of a solid waste disposal facility or hazardous  
13          waste facility, including—

14               (1) interpreting information with regard to—

15                       (A) cumulative impacts studies;

16                       (B) health impacts studies;

17                       (C) relevant agency decisions; and

18                       (D) operation and maintenance of nec-  
19          essary monitors; and

20               (2) performing environmental monitoring.

21          (e) LIMITATIONS ON AMOUNT; RENEWAL.—

22               (1) AMOUNT.—

23                       (A) IN GENERAL.—The amount of a grant  
24          under this section (excluding any renewals of

1 the grant) may not exceed \$50,000 for any  
2 grant recipient.

3 (B) EXCEPTION.—The Administrator may  
4 waive the limitation in subparagraph (A) with  
5 respect to an applicant in any case where the  
6 Administrator determines that such waiver is  
7 necessary for the community involved to obtain  
8 the necessary technical assistance.

9 (2) RENEWAL.—Grants may be renewed for  
10 each step in the process for the permitting or permit  
11 renewal of a solid waste disposal facility or haz-  
12 ardous waste facility.

13 **SEC. 11012. ENVIRONMENTAL JUSTICE COMMUNITY, STATE,**  
14 **AND TRIBAL GRANT PROGRAMS.**

15 (a) ENVIRONMENTAL JUSTICE COMMUNITY GRANT  
16 PROGRAM.—

17 (1) ESTABLISHMENT.—The Administrator shall  
18 establish a program under which the Administrator  
19 shall provide grants to eligible entities to assist the  
20 eligible entities in—

21 (A) building capacity to address issues re-  
22 lating to environmental justice; and

23 (B) carrying out any activity described in  
24 paragraph (4).

1           (2) ELIGIBILITY.—To be eligible to receive a  
2           grant under paragraph (1), an eligible entity shall be  
3           a nonprofit, community-based organization that con-  
4           ducts activities, including providing medical and pre-  
5           ventive health services, to reduce the dispropor-  
6           tionate health impacts of environmental pollution in  
7           the environmental justice community at which the  
8           eligible entity proposes to conduct an activity that is  
9           the subject of the application described in paragraph  
10          (3).

11          (3) APPLICATION.—To be eligible to receive a  
12          grant under paragraph (1), an eligible entity shall  
13          submit to the Administrator an application at such  
14          time, in such manner, and containing such informa-  
15          tion as the Administrator may require, including—

16                (A) an outline describing the means by  
17                which the project proposed by the eligible entity  
18                will—

19                       (i) with respect to environmental and  
20                       public health issues at the local level, in-  
21                       crease the understanding of the environ-  
22                       mental justice community at which the eli-  
23                       gible entity will conduct the project;

1 (ii) improve the ability of the environ-  
2 mental justice community to address each  
3 issue described in clause (i);

4 (iii) facilitate collaboration and co-  
5 operation among various stakeholders (in-  
6 cluding members of the environmental jus-  
7 tice community); and

8 (iv) support the ability of the environ-  
9 mental justice community to proactively  
10 plan and implement just sustainable com-  
11 munity development and revitalization ini-  
12 tiatives, including countering displacement  
13 and gentrification;

14 (B) a proposed budget for each activity of  
15 the project that is the subject of the applica-  
16 tion;

17 (C) a list of proposed outcomes with re-  
18 spect to the proposed project;

19 (D) a description of the ways by which the  
20 eligible entity may leverage the funds of the eli-  
21 gible entity, or the funds made available  
22 through a grant under this subsection, to de-  
23 velop a project that is capable of being sus-  
24 tained beyond the period of the grant; and

1 (E) a description of the ways by which the  
2 eligible entity is linked to, and representative  
3 of, the environmental justice community at  
4 which the eligible entity will conduct the  
5 project.

6 (4) USE OF FUNDS.—An eligible entity may  
7 only use a grant under this subsection to carry out  
8 culturally and linguistically appropriate projects and  
9 activities that are driven by the needs, opportunities,  
10 and priorities of the environmental justice commu-  
11 nity at which the eligible entity proposes to conduct  
12 the project or activity to address environmental jus-  
13 tice concerns and improve the health or environment  
14 of the environmental justice community, including  
15 activities—

16 (A) to create or develop collaborative part-  
17 nerships;

18 (B) to educate and provide outreach serv-  
19 ices to the environmental justice community;

20 (C) to identify and implement projects to  
21 address environmental or public health con-  
22 cerns; or

23 (D) to develop a comprehensive under-  
24 standing of environmental or public health  
25 issues.

1 (5) REPORT.—

2 (A) IN GENERAL.—Not later than 1 year  
3 after the date of enactment of this Act, and an-  
4 nually thereafter, the Administrator shall sub-  
5 mit to the Committees on Energy and Com-  
6 merce and Natural Resources of the House of  
7 Representatives and the Committees on Envi-  
8 ronment and Public Works and Energy and  
9 Natural Resources of the Senate a report de-  
10 scribing the ways by which the grant program  
11 under this subsection has helped community-  
12 based nonprofit organizations address issues re-  
13 lating to environmental justice.

14 (B) PUBLIC AVAILABILITY.—The Adminis-  
15 trator shall make each report required under  
16 subparagraph (A) available to the public (in-  
17 cluding by posting a copy of the report on the  
18 website of the Environmental Protection Agen-  
19 cy).

20 (6) AUTHORIZATION OF APPROPRIATIONS.—  
21 There is authorized to be appropriated to carry out  
22 this subsection \$25,000,000 for each of fiscal years  
23 2021 through 2025.

24 (b) STATE GRANT PROGRAM.—

1           (1) ESTABLISHMENT.—The Administrator shall  
2       establish a program under which the Administrator  
3       shall provide grants to States to enable the States—

4           (A) to establish culturally and linguistically  
5       appropriate protocols, activities, and mecha-  
6       nisms for addressing issues relating to environ-  
7       mental justice; and

8           (B) to carry out culturally and linguis-  
9       tically appropriate activities to reduce or elimi-  
10      nate disproportionately adverse human health  
11      or environmental effects on environmental jus-  
12      tice communities in the State, including reduc-  
13      ing economic vulnerabilities that result in the  
14      environmental justice communities being dis-  
15      proportionately affected.

16       (2) ELIGIBILITY.—

17           (A) APPLICATION.—To be eligible to re-  
18      ceive a grant under paragraph (1), a State shall  
19      submit to the Administrator an application at  
20      such time, in such manner, and containing such  
21      information as the Administrator may require,  
22      including—

23           (i) a plan that contains a description  
24      of the means by which the funds provided  
25      through a grant under paragraph (1) will



1 be used to address issues relating to envi-  
2 ronmental justice at the State level; and

3 (ii) assurances that the funds pro-  
4 vided through a grant under paragraph (1)  
5 will be used only to supplement the  
6 amount of funds that the State allocates  
7 for initiatives relating to environmental  
8 justice.

9 (B) ABILITY TO CONTINUE PROGRAM.—To  
10 be eligible to receive a grant under paragraph  
11 (1), a State shall demonstrate to the Adminis-  
12 trator that the State has the ability to continue  
13 each program that is the subject of funds pro-  
14 vided through a grant under paragraph (1)  
15 after receipt of the funds.

16 (3) REPORT.—

17 (A) IN GENERAL.—Not later than 1 year  
18 after the date of enactment of this Act, and an-  
19 nually thereafter, the Administrator shall sub-  
20 mit to the Committees on Energy and Com-  
21 merce and Natural Resources of the House of  
22 Representatives and the Committees on Envi-  
23 ronment and Public Works and Energy and  
24 Natural Resources of the Senate a report de-  
25 scribing—

- 1 (i) the implementation of the grant  
2 program established under paragraph (1);  
3 (ii) the impact of the grant program  
4 on improving the ability of each partici-  
5 pating State to address environmental jus-  
6 tice issues; and  
7 (iii) the activities carried out by each  
8 State to reduce or eliminate disproportion-  
9 ately adverse human health or environ-  
10 mental effects on environmental justice  
11 communities in the State.

12 (B) PUBLIC AVAILABILITY.—The Adminis-  
13 trator shall make each report required under  
14 subparagraph (A) available to the public (in-  
15 cluding by posting a copy of the report on the  
16 website of the Environmental Protection Agen-  
17 cy).

18 (4) AUTHORIZATION OF APPROPRIATIONS.—  
19 There is authorized to be appropriated to carry out  
20 this subsection \$15,000,000 for each of fiscal years  
21 2021 through 2025.

22 (c) TRIBAL GRANT PROGRAM.—

23 (1) ESTABLISHMENT.—The Administrator shall  
24 establish a program under which the Administrator

1       shall provide grants to Tribal Governments to enable  
2       the Indian Tribes—

3               (A) to establish culturally and linguistically  
4               appropriate protocols, activities, and mecha-  
5               nisms for addressing issues relating to environ-  
6               mental justice; and

7               (B) to carry out culturally and linguis-  
8               tically appropriate activities to reduce or elimi-  
9               nate disproportionately adverse human health  
10              or environmental effects on environmental jus-  
11              tice communities in Tribal and indigenous com-  
12              munities, including reducing economic  
13              vulnerabilities that result in the Tribal and in-  
14              digenous communities being disproportionately  
15              affected.

16       (2) ELIGIBILITY.—

17               (A) APPLICATION.—To be eligible to re-  
18               ceive a grant under paragraph (1), a Tribal  
19               Government shall submit to the Administrator  
20               an application at such time, in such manner,  
21               and containing such information as the Admin-  
22               istrator may require, including—

23                       (i) a plan that contains a description  
24                       of the means by which the funds provided  
25                       through a grant under paragraph (1) will

1 be used to address issues relating to envi-  
2 ronmental justice in Tribal and indigenous  
3 communities; and

4 (ii) assurances that the funds pro-  
5 vided through a grant under paragraph (1)  
6 will be used only to supplement the  
7 amount of funds that the Tribal Govern-  
8 ment allocates for initiatives relating to en-  
9 vironmental justice.

10 (B) ABILITY TO CONTINUE PROGRAM.—To  
11 be eligible to receive a grant under paragraph  
12 (1), a Tribal Government shall demonstrate to  
13 the Administrator that the Tribal Government  
14 has the ability to continue each program that is  
15 the subject of funds provided through a grant  
16 under paragraph (1) after receipt of the funds.  
17 (3) REPORT.—

18 (A) IN GENERAL.—Not later than 1 year  
19 after the date of enactment of this Act, and an-  
20 nually thereafter, the Administrator shall sub-  
21 mit to the Committees on Energy and Com-  
22 merce and Natural Resources of the House of  
23 Representatives and the Committees on Envi-  
24 ronment and Public Works and Energy and

1 Natural Resources of the Senate a report de-  
2 scribing—

3 (i) the implementation of the grant  
4 program established under paragraph (1);

5 (ii) the impact of the grant program  
6 on improving the ability of each partici-  
7 pating Indian Tribe to address environ-  
8 mental justice issues; and

9 (iii) the activities carried out by each  
10 Tribal Government to reduce or eliminate  
11 disproportionately adverse human health or  
12 environmental effects on applicable envi-  
13 ronmental justice communities in Tribal  
14 and indigenous communities.

15 (B) PUBLIC AVAILABILITY.—The Adminis-  
16 trator shall make each report required under  
17 subparagraph (A) available to the public (in-  
18 cluding by posting a copy of the report on the  
19 website of the Environmental Protection Agen-  
20 cy).

21 (4) AUTHORIZATION OF APPROPRIATIONS.—  
22 There is authorized to be appropriated to carry out  
23 this subsection \$25,000,000 for each of fiscal years  
24 2021 through 2025.

1 (d) COMMUNITY-BASED PARTICIPATORY RESEARCH  
2 GRANT PROGRAM.—

3 (1) ESTABLISHMENT.—The Administrator, in  
4 consultation with the Director, shall establish a pro-  
5 gram under which the Administrator shall provide  
6 not more than 25 multiyear grants to eligible enti-  
7 ties to carry out community-based participatory re-  
8 search—

9 (A) to address issues relating to environ-  
10 mental justice;

11 (B) to improve the environment of resi-  
12 dents and workers in environmental justice  
13 communities; and

14 (C) to improve the health outcomes of resi-  
15 dents and workers in environmental justice  
16 communities.

17 (2) ELIGIBILITY.—To be eligible to receive a  
18 multiyear grant under paragraph (1), an eligible en-  
19 tity shall be a partnership comprised of—

20 (A) an accredited institution of higher edu-  
21 cation; and

22 (B) a community-based organization.

23 (3) APPLICATION.—To be eligible to receive a  
24 multiyear grant under paragraph (1), an eligible en-  
25 tity shall submit to the Administrator an application

1 at such time, in such manner, and containing such  
2 information as the Administrator may require, in-  
3 cluding—

4 (A) a detailed description of the partner-  
5 ship of the eligible entity that, as determined by  
6 the Administrator, demonstrates the participa-  
7 tion of members of the community at which the  
8 eligible entity proposes to conduct the research;  
9 and

10 (B) a description of—

11 (i) the project proposed by the eligible  
12 entity; and

13 (ii) the ways by which the project  
14 will—

15 (I) address issues relating to en-  
16 vironmental justice;

17 (II) assist in the improvement of  
18 health outcomes of residents and  
19 workers in environmental justice com-  
20 munities; and

21 (III) assist in the improvement of  
22 the environment of residents and  
23 workers in environmental justice com-  
24 munities.

1           (4) PUBLIC AVAILABILITY.—The Administrator  
2       shall make the results of the grants available pro-  
3       vided under this subsection to the public, including  
4       by posting on the website of the Environmental Pro-  
5       tection Agency a copy of the grant awards and an  
6       annual report at the beginning of each fiscal year  
7       describing the research findings associated with each  
8       grant provided under this subsection.

9           (5) AUTHORIZATION OF APPROPRIATIONS.—  
10      There is authorized to be appropriated to carry out  
11      this subsection \$10,000,000 for each of fiscal years  
12      2021 through 2025.

13 **SEC. 11013. PROTECTIONS FOR ENVIRONMENTAL JUSTICE**  
14                   **COMMUNITIES AGAINST HARMFUL FEDERAL**  
15                   **ACTIONS.**

16      (a) PURPOSE; DEFINITIONS.—

17           (1) PURPOSE.—The purpose of this section is  
18      to establish additional protections relating to Fed-  
19      eral actions affecting environmental justice commu-  
20      nities in recognition of the disproportionate burden  
21      of adverse human health or environmental effects  
22      faced by such communities.

23           (2) DEFINITIONS.—In this section:

24                   (A) FEDERAL ACTION.—The term “Fed-  
25      eral action” means a proposed action that re-



1           quires the preparation of an environmental im-  
2           pact statement, environmental assessment, cat-  
3           egorical exclusion, or other document under the  
4           National Environmental Policy Act of 1969 (42  
5           U.S.C. 4321 et seq.).

6                   (B) ENVIRONMENTAL IMPACT STATE-  
7           MENT.—The term “environmental impact state-  
8           ment” means the detailed statement of environ-  
9           mental impacts of a proposed action required to  
10          be prepared pursuant to the National Environ-  
11          mental Policy Act of 1969 (42 U.S.C. 4321 et  
12          seq.).

13          (b) PREPARATION OF A COMMUNITY IMPACT RE-  
14   PORT.—A Federal agency proposing to take a Federal ac-  
15   tion that has the potential to cause negative environmental  
16   or public health impacts on an environmental justice com-  
17   munity shall prepare a community impact report assessing  
18   the potential impacts of the proposed action.

19          (c) CONTENTS.—The community impact report de-  
20   scribed in subsection (b) shall—

21               (1) assess the degree to which a proposed Fed-  
22   eral action affecting an environmental justice com-  
23   munity will cause multiple or cumulative exposure to  
24   human health and environmental hazards that influ-

1       ence, exacerbate or contribute to adverse health out-  
2       comes;

3           (2) assess relevant public health data and in-  
4       dustry data concerning the potential for multiple or  
5       cumulative exposure to human health or environ-  
6       mental hazards in the area of the environmental jus-  
7       tice community and historical patterns of exposure  
8       to environmental hazards and agencies shall assess  
9       these multiple, or cumulative effects, even if certain  
10      effects are not within the control or subject to the  
11      discretion of the Federal agency proposing the Fed-  
12      eral action;

13           (3) assess the impact of such proposed Federal  
14      action on such environmental justice community's  
15      ability to access public parks, outdoor spaces, and  
16      public recreation opportunities;

17           (4) evaluate alternatives to or mitigation meas-  
18      ures for the proposed Federal action that will—

19           (A) eliminate or reduce any identified ex-  
20      posure to human health and environmental haz-  
21      ards described in paragraph (1) to a level that  
22      is reasonably expected to avoid human health  
23      impacts in environmental justice communities;  
24      and

1 (B) not negatively impact an environ-  
2 mental justice community's ability to access  
3 public parks, outdoor spaces, and public recre-  
4 ation opportunities; and

5 (5) analyze any alternative developed by mem-  
6 bers of an affected environmental justice community  
7 that meets the purpose and need of the proposed ac-  
8 tion.

9 (d) DELEGATION.—Federal agencies shall not dele-  
10 gate responsibility for the preparation of a community im-  
11 pact report prepared under this section to any other enti-  
12 ty.

13 (e) NATIONAL ENVIRONMENTAL POLICY ACT RE-  
14 QUIREMENTS FOR ENVIRONMENTAL JUSTICE COMMU-  
15 NITIES.—When carrying out the requirements of the Na-  
16 tional Environmental Policy Act of 1969 (42 U.S.C. 4321  
17 et seq.) for a proposed Federal action that may affect an  
18 environmental justice community, a Federal agency  
19 shall—

20 (1) consider all potential direct, indirect, and  
21 cumulative impacts caused by the action, alter-  
22 natives to such action, and mitigation measures on  
23 the environmental justice community required by the  
24 National Environmental Policy Act of 1969 (42  
25 U.S.C. 4321 et seq.);

1           (2) require any public comment period carried  
2           out during the scoping phase of the environmental  
3           review process to be no less than 90 days;

4           (3) provide early and meaningful community in-  
5           volvement opportunities by—

6                   (A) holding multiple hearings in such com-  
7                   munity regarding the proposed Federal action  
8                   in each prominent language within the environ-  
9                   mental justice community; and

10                   (B) providing notice of any step or action  
11                   in the National Environmental Policy Act proc-  
12                   ess that involves public participation to any rep-  
13                   resentative entities or organizations present in  
14                   the environmental justice community includ-  
15                   ing—

16                           (i) local religious organizations;

17                           (ii) civic associations and organiza-  
18                           tions;

19                           (iii) business associations of people of  
20                           color;

21                           (iv) environmental and environmental  
22                           justice organizations, including community-  
23                           based grassroots organizations led by peo-  
24                           ple of color;

- 1 (v) homeowners', tenants', and neigh-  
2 borhood watch groups;  
3 (vi) local and Tribal Governments;  
4 (vii) rural cooperatives;  
5 (viii) business and trade organiza-  
6 tions;  
7 (ix) community and social service or-  
8 ganizations;  
9 (x) universities, colleges, and voca-  
10 tional schools;  
11 (xi) labor and other worker organiza-  
12 tions;  
13 (xii) civil rights organizations;  
14 (xiii) senior citizens' groups; and  
15 (xiv) public health agencies and clin-  
16 ics; and  
17 (4) provide translations of publicly available  
18 documents made available pursuant to the National  
19 Environmental Policy Act in any language spoken by  
20 more than 5 percent of the population residing with-  
21 in the environmental justice community.  
22 (f) COMMUNICATION METHODS AND REQUIRE-  
23 MENTS.—Any notice provided under subsection (e)(3)(B)  
24 shall be provided—

1 (1) through communication methods that are  
2 accessible in the environmental justice community.  
3 Such methods may include electronic media, news-  
4 papers, radio, direct mailings, canvassing, and other  
5 outreach methods particularly targeted at commu-  
6 nities of color, low-income communities, and Tribal  
7 and indigenous communities; and

8 (2) at least 30 days before any hearing in such  
9 community or the start of any public comment pe-  
10 riod.

11 (g) REQUIREMENTS FOR ACTIONS REQUIRING AN  
12 ENVIRONMENTAL IMPACT STATEMENT.—For any pro-  
13 posed Federal action affecting an environmental justice  
14 community requiring the preparation of an environmental  
15 impact statement, the Federal agency shall provide the fol-  
16 lowing information when giving notice of the proposed ac-  
17 tion:

18 (1) A description of the proposed action.

19 (2) An outline of the anticipated schedule for  
20 completing the process under the National Environ-  
21 mental Policy Act, with a description of key mile-  
22 stones.

23 (3) An initial list of alternatives and potential  
24 impacts.

1           (4) An initial list of other existing or proposed  
2           sources of multiple or cumulative exposure to envi-  
3           ronmental hazards that contribute to higher rates of  
4           serious illnesses within the environmental justice  
5           community.

6           (5) An agency point of contact.

7           (6) Timely notice of locations where comments  
8           will be received or public meetings held.

9           (7) Any telephone number or locations where  
10          further information can be obtained.

11          (h) NATIONAL ENVIRONMENTAL POLICY ACT RE-  
12          QUIREMENTS FOR INDIAN TRIBES.—When carrying out  
13          the requirements of the National Environmental Policy  
14          Act for a proposed Federal action that may affect an In-  
15          dian Tribe, a Federal agency shall—

16                (1) seek Tribal representation in the process in  
17                a manner that is consistent with the government-to-  
18                government relationship between the United States  
19                and Tribal Governments, the Federal Government’s  
20                trust responsibility to federally recognized Tribes,  
21                and any treaty rights;

22                (2) ensure that an Indian Tribe is invited to  
23                hold the status of a cooperating agency throughout  
24                the National Environmental Policy Act process for  
25                any proposed action that could impact an Indian

1 Tribe including actions that could impact off res-  
2 ervation lands and sacred sites; and

3 (3) invite an Indian Tribe to hold the status of  
4 a cooperating agency in accordance with paragraph  
5 (2) no later than the commencement of the scoping  
6 process for a proposed action requiring the prepara-  
7 tion of an environmental impact statement.

8 (i) AGENCY DETERMINATIONS.—Federal agency de-  
9 terminations about the analysis of a community impact  
10 report described in this section shall be subject to judicial  
11 review to the same extent as any other analysis performed  
12 under the National Environmental Policy Act.

13 (j) EFFECTIVE DATE.—This section shall take effect  
14 one year after the date of enactment of this Act.

15 (k) SAVINGS CLAUSE.—Nothing in this section di-  
16 minishes—

17 (1) any right granted through the National En-  
18 vironmental Policy Act of 1969 (42 U.S.C. 4321 et  
19 seq.) to the public; or

20 (2) the requirements under that Act to consider  
21 direct, indirect, and cumulative impacts.

22 **SEC. 11014. PROHIBITED DISCRIMINATION.**

23 Section 601 of the Civil Rights Act of 1964 (42  
24 U.S.C. 2000d) is amended—



1           (1) by striking “No” and inserting “(a) No”;  
2           and

3           (2) by adding at the end the following:

4           “(b)(1)(A) Discrimination (including exclusion from  
5 participation and denial of benefits) based on disparate  
6 impact is established under this title if—

7                   “(i) a covered agency has a program,  
8                   policy, practice, or activity that causes a  
9                   disparate impact on the basis of race,  
10                  color, or national origin and the covered  
11                  agency fails to demonstrate that the chal-  
12                  lenged program, policy, practice, or activity  
13                  is related to and necessary to achieve the  
14                  nondiscriminatory goal of the program,  
15                  policy, practice, or activity alleged to have  
16                  been operated in a discriminatory manner;  
17                  or

18                   “(ii) a less discriminatory alternative  
19                   program, policy, practice, or activity exists,  
20                   and the covered agency refuses to adopt  
21                   such alternative program, policy, practice,  
22                   or activity.

23                  “(B) With respect to demonstrating that a  
24                  particular program, policy, practice, or activity  
25                  does not cause a disparate impact, the covered

1           agency shall demonstrate that each particular  
2           challenged program, policy, practice, or activity  
3           does not cause a disparate impact, except that  
4           if the covered agency demonstrates to the  
5           courts that the elements of the covered agency's  
6           decision-making process are not capable of sep-  
7           aration for analysis, the decision-making proc-  
8           ess may be analyzed as 1 program, policy, prac-  
9           tice, or activity.

10          “(2) A demonstration that a program, policy,  
11          practice, or activity is necessary to achieve the goals  
12          of a program, policy, practice, or activity may not be  
13          used as a defense against a claim of intentional dis-  
14          crimination under this title.

15          “(c) No person in the United States shall be sub-  
16          jected to discrimination, including retaliation or intimidat-  
17          ion, because such person opposed any program, policy,  
18          practice, or activity prohibited by this title, or because  
19          such person made a charge, testified, assisted, or partici-  
20          pated in any manner in an investigation, proceeding, or  
21          hearing under this title.”.

22       **SEC. 11015. RIGHT OF ACTION.**

23          (a) IN GENERAL.—Section 602 of the Civil Rights  
24          Act of 1964 (42 U.S.C. 2000d–1) is amended—

1 (1) by inserting “(a)” before “Each Federal de-  
2 partment and agency which is empowered”; and

3 (2) by adding at the end the following:

4 “(b) Any person aggrieved by the failure to comply  
5 with this title, including any regulation promulgated pur-  
6 suant to this title, may file suit in any district court of  
7 the United States having jurisdiction of the parties, with-  
8 out respect to the amount in controversy and without re-  
9 gard to the citizenship of the parties.”.

10 (b) EFFECTIVE DATE.—

11 (1) IN GENERAL.—This section, including the  
12 amendments made by this section, takes effect on  
13 the date of enactment of this Act.

14 (2) APPLICATION.—This section, including the  
15 amendments made by this section, applies to all ac-  
16 tions or proceedings pending on or after the date of  
17 enactment of this Act.

18 **SEC. 11016. RIGHTS OF RECOVERY.**

19 Title VI of the Civil Rights Act of 1964 (42 U.S.C.  
20 2000d et seq.) is amended by inserting after section 602  
21 the following:

22 **“SEC. 602A. ACTIONS BROUGHT BY AGGRIEVED PERSONS.**

23 “(a) CLAIMS BASED ON PROOF OF INTENTIONAL  
24 DISCRIMINATION.—In an action brought by an aggrieved  
25 person under this title against a covered agency who has

1 engaged in unlawful intentional discrimination (not a  
2 practice that is unlawful because of its disparate impact)  
3 prohibited under this title (including its implementing reg-  
4 ulations), the aggrieved person may recover equitable and  
5 legal relief (including compensatory and punitive dam-  
6 ages), attorney’s fees (including expert fees), and costs of  
7 the action, except that punitive damages are not available  
8 against a government, government agency, or political  
9 subdivision.

10 “(b) CLAIMS BASED ON THE DISPARATE IMPACT  
11 STANDARD OF PROOF.—In an action brought by an ag-  
12 grieved person under this title against a covered agency  
13 who has engaged in unlawful discrimination based on dis-  
14 parate impact prohibited under this title (including imple-  
15 menting regulations), the aggrieved person may recover  
16 attorney’s fees (including expert fees), and costs of the  
17 action.”.

18 **TITLE XII—OTHER MATTERS**  
19 **Subtitle A—Blue Collar to Green**  
20 **Collar Jobs Development**

21 **PART 1—OFFICE OF ECONOMIC IMPACT,**  
22 **DIVERSITY, AND EMPLOYMENT**

23 **SEC. 12101. NAME OF OFFICE.**

24 (a) IN GENERAL.—Section 211 of the Department of  
25 Energy Organization Act (42 U.S.C. 7141) is amended—

1 (1) in the section heading, by striking “MINOR-  
2 ITY ECONOMIC IMPACT” and inserting “ECONOMIC  
3 IMPACT, DIVERSITY, AND EMPLOYMENT”; and

4 (2) in subsection (a), by striking “Office of Mi-  
5 nority Economic Impact” and inserting “Office of  
6 Economic Impact, Diversity, and Employment”.

7 (b) CONFORMING AMENDMENT.—The table of con-  
8 tents for the Department of Energy Organization Act is  
9 amended by amending the item relating to section 211 to  
10 read as follows:

“Sec. 211. Office of Economic Impact, Diversity, and Employment.”.

11 **SEC. 12102. ENERGY WORKFORCE DEVELOPMENT PRO-**  
12 **GRAMS.**

13 Section 211 of the Department of Energy Organiza-  
14 tion Act (42 U.S.C. 7141) is amended—

15 (1) by redesignating subsections (f) and (g) as  
16 subsections (g) and (h), respectively; and

17 (2) by inserting after subsection (e) the fol-  
18 lowing:

19 “(f) The Secretary, acting through the Director, shall  
20 establish and carry out the programs described in sections  
21 12111 and 12112 of the Clean Economy Jobs and Innova-  
22 tion Act.”.

23 **SEC. 12103. AUTHORIZATION.**

24 Subsection (h) of section 211 of the Department of  
25 Energy Organization Act (42 U.S.C. 7141), as redesign-

1 nated by section 12102 of this Act, is amended by striking  
2 “not to exceed \$3,000,000 for fiscal year 1979, not to ex-  
3 ceed \$5,000,000 for fiscal year 1980, and not to exceed  
4 \$6,000,000 for fiscal year 1981. Of the amounts so appro-  
5 priated each fiscal year, not less than 50 percent shall be  
6 available for purposes of financial assistance under sub-  
7 section (e).” and inserting “\$100,000,000 for each of fis-  
8 cal years 2021 through 2025.”.

## 9 **PART 2—ENERGY WORKFORCE DEVELOPMENT**

### 10 **SEC. 12111. ENERGY WORKFORCE DEVELOPMENT.**

11 (a) IN GENERAL.—Subject to the availability of ap-  
12 propriations, the Secretary, acting through the Director  
13 of the Office of Economic Impact, Diversity, and Employ-  
14 ment, shall establish and carry out a comprehensive, na-  
15 tionwide program to improve education and training for  
16 jobs in energy-related industries, including manufacturing,  
17 engineering, construction, and retrofitting jobs in such en-  
18 ergy-related industries, in order to increase the number  
19 of skilled workers trained to work in such energy-related  
20 industries, including by—

21 (1) encouraging underrepresented groups, in-  
22 cluding religious and ethnic minorities, women, vet-  
23 erans, individuals with disabilities, unemployed en-  
24 ergy workers, and socioeconomically disadvantaged  
25 individuals to enter into the science, technology, en-

1       gineering, and mathematics (in this section referred  
2       to as “STEM”) fields;

3           (2) encouraging the Nation’s educational insti-  
4       tutions to equip students with the skills,  
5       mentorships, training, and technical expertise nec-  
6       essary to fill the employment opportunities vital to  
7       managing and operating the Nation’s energy-related  
8       industries;

9           (3) providing students and other candidates for  
10      employment with the necessary skills and certifi-  
11      cations for skilled, semiskilled, and highly skilled  
12      jobs in such energy-related industries;

13          (4) strengthening and more fully engaging De-  
14      partment of Energy programs and laboratories in  
15      carrying out the Department’s Minorities in Energy  
16      Initiative; and

17          (5) to the greatest extent possible, collaborating  
18      with and supporting existing State workforce devel-  
19      opment programs to maximize program efficiency.

20      (b) PRIORITY.—In carrying out the program estab-  
21      lished under subsection (a), the Secretary shall prioritize  
22      the education and training of underrepresented groups for  
23      jobs in energy-related industries.

24      (c) DIRECT ASSISTANCE.—In carrying out the pro-  
25      gram established under subsection (a), the Secretary shall

1 provide direct assistance (including financial assistance  
2 awards, technical expertise, and internships) to edu-  
3 cational institutions, local workforce development boards,  
4 State workforce development boards, nonprofit organiza-  
5 tions, labor organizations, and apprenticeship programs.  
6 The Secretary shall distribute such direct assistance in a  
7 manner proportional to the needs of, and demand for jobs  
8 in, energy-related industries, consistent with information  
9 obtained under subsections (e)(3) and (i).

10 (d) CLEARINGHOUSE.—In carrying out the program  
11 established under subsection (a), the Secretary shall estab-  
12 lish a clearinghouse to—

13 (1) maintain and update information and re-  
14 sources on training programs for jobs in energy-re-  
15 lated industries, including manufacturing, engineer-  
16 ing, construction, and retrofitting jobs in such en-  
17 ergy-related industries; and

18 (2) act as a resource for educational institu-  
19 tions, local workforce development boards, State  
20 workforce development boards, nonprofit organiza-  
21 tions, labor organizations, and apprenticeship pro-  
22 grams that would like to develop and implement  
23 training programs for such jobs.



1 (e) COLLABORATION AND REPORT.—In carrying out  
2 the program established under subsection (a), the Sec-  
3 retary—

4 (1) shall collaborate with educational institu-  
5 tions, local workforce development boards, State  
6 workforce development boards, nonprofit organiza-  
7 tions, labor organizations, apprenticeship programs,  
8 and energy-related industries;

9 (2) shall encourage and foster collaboration,  
10 mentorships, and partnerships among industry, local  
11 workforce development boards, State workforce de-  
12 velopment boards, nonprofit organizations, labor or-  
13 ganizations, and apprenticeship programs that cur-  
14 rently provide effective training programs for jobs in  
15 energy-related industries and educational institutions  
16 that seek to establish these types of programs in  
17 order to share best practices and approaches that  
18 best suit local, State, and national needs; and

19 (3) shall collaborate with the Bureau of Labor  
20 Statistics, the Department of Commerce, the Bureau  
21 of the Census, and energy-related industries to—

22 (A) develop a comprehensive and detailed  
23 understanding of the workforce needs of such  
24 energy-related industries, and job opportunities

1 in such energy-related industries, by State and  
2 by region; and

3 (B) publish an annual report on job cre-  
4 ation in the energy-related industries described  
5 in subsection (i)(2).

6 (f) GUIDELINES FOR EDUCATIONAL INSTITU-  
7 TIONS.—

8 (1) IN GENERAL.—In carrying out the program  
9 established under subsection (a), the Secretary, in  
10 collaboration with the Secretary of Education, the  
11 Secretary of Commerce, the Secretary of Labor, and  
12 the National Science Foundation, shall develop vol-  
13 untary guidelines or best practices for educational  
14 institutions to help provide graduates with the skills  
15 necessary for jobs in energy-related industries, in-  
16 cluding manufacturing, engineering, construction,  
17 and retrofitting jobs in such energy-related indus-  
18 tries.

19 (2) INPUT.—The Secretary shall solicit input  
20 from energy-related industries in developing guide-  
21 lines or best practices under paragraph (1).

22 (3) ENERGY EFFICIENCY AND CONSERVATION  
23 INITIATIVES.—The guidelines or best practices devel-  
24 oped under paragraph (1) shall include grade-spe-  
25 cific guidelines for teaching energy efficiency tech-

1 nology, manufacturing efficiency technology, commu-  
2 nity energy resiliency, and conservation initiatives to  
3 educate students and families.

4 (4) STEM EDUCATION.—The guidelines or best  
5 practices developed under paragraph (1) shall pro-  
6 mote STEM education in educational institutions as  
7 it relates to job opportunities in energy-related in-  
8 dustries.

9 (g) OUTREACH TO MINORITY-SERVING INSTITU-  
10 TIONS.—In carrying out the program established under  
11 subsection (a), the Secretary shall—

12 (1) give special consideration to increasing out-  
13 reach to minority-serving institutions;

14 (2) make resources available to minority-serving  
15 institutions with the objective of increasing the num-  
16 ber of skilled minorities and women trained for jobs  
17 in energy-related industries, including manufac-  
18 turing, engineering, construction, and retrofitting  
19 jobs in such energy-related industries;

20 (3) encourage energy-related industries to im-  
21 prove the opportunities for students of minority-  
22 serving institutions to participate in industry intern-  
23 ships and cooperative work-study programs; and

24 (4) partner with the Department of Energy lab-  
25 oratories to increase underrepresented groups' par-

1        ticipation in internships, fellowships, traineeships,  
2        and employment at all Department of Energy lab-  
3        oratories.

4        (h) OUTREACH TO DISPLACED AND UNEMPLOYED  
5 ENERGY WORKERS.—In carrying out the program estab-  
6 lished under subsection (a), the Secretary shall—

7            (1) give special consideration to increasing out-  
8 reach to employers and job trainers preparing dis-  
9 placed and unemployed energy workers for emerging  
10 jobs in energy-related industries, including manufac-  
11 turing, engineering, construction, and retrofitting  
12 jobs in such energy-related industries;

13           (2) make resources available to institutions  
14 serving displaced and unemployed energy workers  
15 with the objective of increasing the number of indi-  
16 viduals trained for jobs in energy-related industries,  
17 including manufacturing, engineering, construction,  
18 and retrofitting jobs in such energy-related indus-  
19 tries; and

20           (3) encourage energy-related industries to im-  
21 prove opportunities for displaced and unemployed  
22 energy workers to participate in industry internships  
23 and cooperative work-study programs.

24        (i) GUIDELINES TO DEVELOP SKILLS FOR AN EN-  
25 ERGY INDUSTRY WORKFORCE.—In carrying out the pro-

1 gram established under subsection (a), the Secretary shall,  
2 in collaboration with energy-related industries—

3 (1) identify the areas with the greatest demand  
4 for workers in each such industry; and

5 (2) develop guidelines for the skills necessary  
6 for work in the following energy-related industries:

7 (A) Energy efficiency industry, including  
8 work in energy efficiency, conservation, weath-  
9 erization, retrofitting, or as inspectors or audi-  
10 tors.

11 (B) Renewable energy industry, including  
12 work in the development, engineering, manufac-  
13 turing, and production of renewable energy  
14 from renewable energy sources (such as solar,  
15 hydropower, wind, or geothermal energy).

16 (C) Community energy resiliency industry,  
17 including work in the installation of rooftop  
18 solar, in battery storage, and in microgrid tech-  
19 nologies.

20 (D) Fuel cell and hydrogen energy indus-  
21 try.

22 (E) Manufacturing industry, including  
23 work as operations technicians, in operations  
24 and design in additive manufacturing, 3-D  
25 printing, and advanced composites and ad-

1           vanded aluminum and other metal alloys, indus-  
2           trial energy efficiency management systems, in-  
3           cluding power electronics, and other innovative  
4           technologies.

5           (F) Chemical manufacturing industry, in-  
6           cluding work in construction (such as welders,  
7           pipefitters, and tool and die makers) or as in-  
8           strument and electrical technicians, machinists,  
9           chemical process operators, engineers, quality  
10          and safety professionals, and reliability engi-  
11          neers.

12          (G) Utility industry, including work in the  
13          generation, transmission, and distribution of  
14          electricity and natural gas, such as utility tech-  
15          nicians, operators, lineworkers, engineers, sci-  
16          entists, and information technology specialists.

17          (H) Alternative fuels industry, including  
18          work in biofuel development and production.

19          (I) Pipeline industry, including work in  
20          pipeline construction and maintenance or work  
21          as engineers or technical advisors.

22          (J) Nuclear industry, including work as  
23          scientists, engineers, technicians, mathemati-  
24          cians, or security personnel.

1 (K) Oil and gas industry, including work  
2 as scientists, engineers, technicians, mathemati-  
3 cians, petrochemical engineers, or geologists.

4 (L) Coal industry, including work as coal  
5 miners, engineers, developers and manufactur-  
6 ers of state-of-the-art coal facilities, technology  
7 vendors, coal transportation workers and opera-  
8 tors, or mining equipment vendors.

9 (j) ENROLLMENT IN TRAINING AND APPRENTICE-  
10 SHIP PROGRAMS.—In carrying out the program estab-  
11 lished under subsection (a), the Secretary shall work with  
12 industry, local workforce development boards, State work-  
13 force development boards, nonprofit organizations, labor  
14 organizations, and apprenticeship programs to help iden-  
15 tify students and other candidates, including from under-  
16 represented communities such as minorities, women, and  
17 veterans, to enroll into training and apprenticeship pro-  
18 grams for jobs in energy-related industries.

19 (k) AUTHORIZATION OF APPROPRIATIONS.—There  
20 are authorized to be appropriated to carry out this section  
21 \$20,000,000 for each of fiscal years 2021 through 2025.

22 **SEC. 12112. ENERGY WORKFORCE GRANT PROGRAM.**

23 (a) PROGRAM.—

24 (1) ESTABLISHMENT.—Subject to the avail-  
25 ability of appropriations, the Secretary, acting

1 through the Director of the Office of Economic Im-  
2 pact, Diversity, and Employment, shall establish and  
3 carry out a program to provide grants to eligible  
4 businesses to pay the wages of new and existing em-  
5 ployees during the time period that such employees  
6 are receiving training to work in the renewable en-  
7 ergy sector, energy efficiency sector, or grid mod-  
8 ernization sector.

9 (2) GUIDELINES.—Not later than 60 days after  
10 the date of enactment of this Act, the Secretary, in  
11 consultation with stakeholders, contractors, and or-  
12 ganizations that work to advance existing residential  
13 energy efficiency, shall establish guidelines to iden-  
14 tify training that is eligible for purposes of the pro-  
15 gram established pursuant to paragraph (1).

16 (b) ELIGIBILITY.—To be eligible to receive a grant  
17 under the program established under subsection (a) or a  
18 business or labor management organization that is directly  
19 involved with energy efficiency or renewable energy tech-  
20 nology, or working on behalf of any such business, shall  
21 provide services related to—

22 (1) renewable electric energy generation, includ-  
23 ing solar, wind, geothermal, hydropower, and other  
24 renewable electric energy generation technologies;



1           (2) energy efficiency, including energy-efficient  
2           lighting, heating, ventilation, and air conditioning,  
3           air source heat pumps, advanced building materials,  
4           insulation and air sealing, and other high-efficiency  
5           products and services, including auditing and inspec-  
6           tion;

7           (3) grid modernization or energy storage, in-  
8           cluding smart grid, microgrid and other distributed  
9           energy solutions, demand response management, and  
10          home energy management technology; or

11          (4) fuel cell and hybrid fuel cell generation.

12          (c) USE OF GRANTS.—An eligible business with—

13           (1) 20 or fewer employees may use a grant pro-  
14           vided under the program established under sub-  
15           section (a) to pay up to—

16           (A) 45 percent of an employee's wages for  
17           the duration of the training, if the training is  
18           provided by the eligible business; and

19           (B) 90 percent of an employee's wages for  
20           the duration of the training, if the training is  
21           provided by an entity other than the eligible  
22           business;

23           (2) 21 to 99 employees may use a grant pro-  
24           vided under the program established under sub-  
25           section (a) to pay up to—

1 (A) 37.5 percent of an employee's wages  
2 for the duration of the training, if the training  
3 is provided by the eligible business; and

4 (B) 75 percent of an employee's wages for  
5 the duration of the training, if the training is  
6 provided by an entity other than the eligible  
7 business; and

8 (3) 100 employees or more may use a grant  
9 provided under the program established under sub-  
10 section (a) to pay up to—

11 (A) 25 percent of an employee's wages for  
12 the duration of the training, if the training is  
13 provided by the eligible business; and

14 (B) 50 percent of an employee's wages for  
15 the duration of the training, if the training is  
16 provided by an entity other than the eligible  
17 business.

18 (d) PRIORITY FOR TARGETED COMMUNITIES.—In  
19 providing grants under the program established under  
20 subsection (a), the Secretary shall give priority to eligible  
21 businesses that—

22 (1) recruit employees—

23 (A) from the communities that the busi-  
24 nesses serve; and

1 (B) that are minorities, women, persons  
2 who are or were foster children, persons who  
3 are transitioning from fossil energy sector jobs,  
4 or veterans; and

5 (2) provide trainees with the opportunity to ob-  
6 tain real-world experience.

7 (e) LIMIT.—An eligible business may not receive  
8 more than \$100,000 under the program established under  
9 subsection (a) per fiscal year.

10 (f) AUTHORIZATION OF APPROPRIATIONS.—There  
11 are authorized to be appropriated to carry out this section  
12 \$70,000,000 for each of fiscal years 2021 through 2025.

13 **SEC. 12113. DEFINITIONS.**

14 In this subtitle:

15 (1) APPRENTICESHIP.—The term “apprentice-  
16 ship” means an apprenticeship registered under the  
17 Act of August 16, 1937 (commonly known as the  
18 “National Apprenticeship Act”; 50 Stat. 664, chap-  
19 ter 663; 29 U.S.C. 50 et seq.).

20 (2) EDUCATIONAL INSTITUTION.—The term  
21 “educational institution” means an elementary  
22 school, secondary school, or institution of higher  
23 education.

24 (3) ELEMENTARY SCHOOL AND SECONDARY  
25 SCHOOL.—The terms “elementary school” and “sec-

1       ondary school” have the meanings given such terms  
2       in section 8101 of the Elementary and Secondary  
3       Education Act of 1965 (20 U.S.C. 7801).

4           (4) ENERGY-RELATED INDUSTRY.—The term  
5       “energy-related industry” includes each of the en-  
6       ergy efficiency, renewable energy, chemical manufac-  
7       turing, utility, alternative fuels, pipeline, nuclear en-  
8       ergy, oil, gas, and coal industries.

9           (5) INSTITUTION OF HIGHER EDUCATION.—The  
10      term “institution of higher education” has the  
11      meaning given such term in section 102 of the High-  
12      er Education Act of 1965 (20 U.S.C. 1002).

13          (6) LABOR ORGANIZATION.—The term “labor  
14      organization” has the meaning given such term in  
15      section 2 of the National Labor Relations Act (29  
16      U.S.C. 152).

17          (7) LOCAL WORKFORCE DEVELOPMENT  
18      BOARD.—The term “local workforce development  
19      board” means a local board, as defined in section 3  
20      of the Workforce Innovation and Opportunity Act  
21      (29 U.S.C. 3102).

22          (8) MINORITY-SERVING INSTITUTION.—The  
23      term “minority-serving institution” means an insti-  
24      tution of higher education that is of one of the fol-  
25      lowing:

1 (A) Hispanic-serving institution (as de-  
2 fined in section 502(a)(5) of the Higher Edu-  
3 cation Act of 1965 (20 U.S.C. 1101a(a)(5))).

4 (B) Tribal College or University (as de-  
5 fined in section 316(b) of the Higher Education  
6 Act of 1965 (20 U.S.C. 1059c(b))).

7 (C) Alaska Native-serving institution (as  
8 defined in section 317(b) of the Higher Edu-  
9 cation Act of 1965 (20 U.S.C. 1059d(b))).

10 (D) Native Hawaiian-serving institution  
11 (as defined in section 317(b) of the Higher  
12 Education Act of 1965 (20 U.S.C. 1059d(b))).

13 (E) Predominantly Black Institution (as  
14 defined in section 318(b) of the Higher Edu-  
15 cation Act of 1965 (20 U.S.C. 1059e(b))).

16 (F) Native American-serving nontribal in-  
17 stitution (as defined in section 319(b) of the  
18 Higher Education Act of 1965 (20 U.S.C.  
19 1059f(b))).

20 (G) Asian American and Native American  
21 Pacific Islander-serving institution (as defined  
22 in section 320(b) of the Higher Education Act  
23 of 1965 (20 U.S.C. 1059g(b))).

24 (9) SECRETARY.—The term “Secretary” means  
25 the Secretary of Energy.

1           (10)   STATE   WORKFORCE   DEVELOPMENT  
2       BOARD.—The term “State workforce development  
3       board” means a State board, as defined in section  
4       3 of the Workforce Innovation and Opportunity Act  
5       (29 U.S.C. 3102).

6           **Subtitle B—Buy American and**  
7           **Wage Rate Requirements**

8   **SEC. 12201. USE OF AMERICAN IRON, STEEL, AND MANU-**  
9           **FACTURED GOODS.**

10       (a) None of the funds made available pursuant to this  
11   Act, or provisions of law added or amended by this Act,  
12   may be used for a project for the construction, alteration,  
13   maintenance, or repair of a public building or public work  
14   unless all of the iron, steel, and manufactured goods used  
15   in the project are produced in the United States.

16       (b) Subsection (a) shall not apply in any case or cat-  
17   egory of cases in which the head of the Federal depart-  
18   ment or agency involved finds that—

19           (1) applying subsection (a) would be incon-  
20       sistent with the public interest;

21           (2) iron, steel, and the relevant manufactured  
22       goods are not produced in the United States in suffi-  
23       cient and reasonably available quantities and of a  
24       satisfactory quality; or

1           (3) inclusion of iron, steel, and manufactured  
2       goods produced in the United States will increase  
3       the cost of the overall project by more than 25 per-  
4       cent.

5       (c) If the head of a Federal department or agency  
6       determines that it is necessary to waive the application  
7       of subsection (a) based on a finding under subsection (b),  
8       the head of the department or agency shall publish in the  
9       Federal Register a detailed written justification as to why  
10      the provision is being waived.

11      (d) This section shall be applied in a manner con-  
12      sistent with United States obligations under international  
13      agreements.

14      **SEC. 12202. WAGE RATE REQUIREMENTS.**

15      Notwithstanding any other provision of law and in  
16      a manner consistent with other provisions in this Act, all  
17      laborers and mechanics employed by contractors and sub-  
18      contractors on projects funded directly by or assisted in  
19      whole or in part by and through the Federal Government  
20      pursuant to this Act, or provisions of law added or amend-  
21      ed by this Act, shall be paid wages at rates not less than  
22      those prevailing on projects of a character similar in the  
23      locality as determined by the Secretary of Labor in accord-  
24      ance with subchapter IV of chapter 31 of title 40, United  
25      States Code. With respect to the labor standards specified

1 in this section, the Secretary of Labor shall have the au-  
2 thority and functions set forth in Reorganization Plan  
3 Numbered 14 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and  
4 section 3145 of title 40, United States Code.

## 5 **Subtitle C—Natural Resources**

### 6 **SEC. 12301. OFFSHORE WIND CAREER TRAINING GRANT** 7 **PROGRAM.**

8 (a) GRANTS AUTHORIZED.—Beginning 180 days  
9 after the date of the enactment of this section, the Sec-  
10 retary may award offshore wind career training grants to  
11 eligible entities for the purpose of establishing or expand-  
12 ing educational or career training programs that provide  
13 individuals in such programs skills and competencies nec-  
14 essary for employment in the offshore wind industry.

#### 15 (b) ALLOCATION OF GRANTS.—

16 (1) LIMITATION ON GRANT QUANTITY AND  
17 SIZE.—An eligible entity may not be awarded—

18 (A) more than one grant under this section  
19 for which the eligible entity is the lead appli-  
20 cant; or

21 (B) a grant under this section in excess of  
22 \$2,500,000.

#### 23 (2) ALLOCATION TO COMMUNITY COLLEGES.—

24 Not less than 25 percent of the total amount award-  
25 ed under this section for a fiscal year shall be



1       awarded to eligible entities that are community col-  
2       leges.

3       (c) PARTNERSHIPS.—An eligible entity seeking to re-  
4       ceive a grant under this section shall establish or partner  
5       with one or more of the following:

6           (1) Another eligible entity (including an eligible  
7       entity that is a community college).

8           (2) A State or local government agency respon-  
9       sible for education, workforce development or off-  
10      shore wind energy activities.

11          (3) A qualified intermediary.

12      (d) USE OF GRANT.—An eligible entity may use a  
13      grant awarded under this section for the following activi-  
14      ties:

15          (1) Occupational skills training, including cur-  
16      riculum development and class-room instruction.

17          (2) Safety and health training.

18          (3) The provision of English language acquisi-  
19      tion and employability skills.

20          (4) Individual referral and tuition assistance for  
21      a community college training program.

22          (5) Career pathway development or expansion  
23      for offshore wind industry occupations.

24          (6) The development or expansion of work-  
25      based learning or incumbent worker training pro-

1       grams aligned with career pathways in a field re-  
2       lated to the offshore wind industry, such as paid in-  
3       ternships, registered apprenticeships and programs  
4       articulating to an apprenticeship program, cus-  
5       tomized training, or transitional jobs.

6           (7) Curriculum development at the under-grad-  
7       uate and postgraduate levels.

8           (8) Development and support of offshore wind  
9       energy major, minor, or certificate programs.

10          (9) Such other activities, as determined by the  
11       Secretary, to meet the purposes of this section.

12       (e) GRANT PROPOSALS.—

13           (1) SUBMISSION PROCEDURE FOR GRANT PRO-  
14       POSALS.—An eligible entity seeking to receive a  
15       grant under this section shall submit a grant pro-  
16       posal to the Secretary at such time, in such manner,  
17       and containing such information as the Secretary  
18       may require.

19           (2) CONTENT OF GRANT PROPOSALS.—A grant  
20       proposal submitted to the Secretary under this sec-  
21       tion shall include a detailed description of—

22           (A) the specific project for which the grant  
23       proposal is submitted, including the manner in  
24       which the grant will be used to develop, offer,  
25       or improve an educational or career training

1 program that will provide individuals in such  
2 program the skills and competencies necessary  
3 for employment in the offshore wind industry;

4 (B) any previous experience of the eligible  
5 entity in providing such educational or career  
6 training programs;

7 (C) the extent to which such project will  
8 meet the educational or career training needs;

9 (D) the quantitative data that dem-  
10 onstrates the demand for employment for such  
11 program in the geographic area served by the  
12 eligible entity, including wages and benefits for  
13 such employment;

14 (E) a description of the entities involved in  
15 the industry or sector partnership; and

16 (F) a description of the activities the eligi-  
17 ble entity will carry out.

18 (f) CRITERIA FOR AWARD OF GRANTS.—

19 (1) IN GENERAL.—Subject to appropriations,  
20 the Secretary shall award grants under this section  
21 based on an evaluation of—

22 (A) the merits of the grant proposal;

23 (B) the available or projected employment  
24 opportunities, including the projected wages  
25 and benefits, available to individuals who com-

1           plete the educational or career training program  
2           that the eligible entity proposes to develop,  
3           offer, or improve; and

4           (C) the availability and capacity of existing  
5           educational or career training programs in the  
6           community to meet future demand for such  
7           programs.

8           (2) PRIORITY.—Priority in awarding grants  
9           under this section shall be given to an eligible entity  
10          that—

11           (A) is—

12           (i) an institution of higher education  
13           that has formed a partnership with a labor  
14           organization or joint-labor management or-  
15           ganization; or

16           (ii) a labor organization or joint-labor  
17           management organization that has formed  
18           a partnership with an institute of higher  
19           education;

20           (B) has entered into a memorandum of un-  
21           derstanding with one or more employers in the  
22           offshore wind industry to partner on the estab-  
23           lishment or expansion of programs funded  
24           under this Act;

1 (C) is located in an economically distressed  
2 area;

3 (D) serves a high number or high percent-  
4 age of individuals who are—

5 (i) dislocated workers (particularly  
6 workers dislocated from the offshore oil  
7 and gas, onshore fossil fuel, nuclear en-  
8 ergy, or fishing industries);

9 (ii) veterans, members of the reserve  
10 components of the Armed Forces, or  
11 former members of such reserve compo-  
12 nents;

13 (iii) unemployed, underemployed, or  
14 disconnected;

15 (iv) individuals with barriers to em-  
16 ployment;

17 (v) in-school and out-of-school youth;  
18 or

19 (vi) formerly incarcerated, adju-  
20 dicated, nonviolent offenders;

21 (E) an eligible entity that proposes to  
22 serve a high percentage or number of low-in-  
23 come or minority students; or

24 (F) demonstration of or established plans  
25 for the eligible entity to be included on the list

1 of eligible providers of training services de-  
2 scribed in section 122(d) of the Workforce In-  
3 novation and Opportunity Act (29 U.S.C.  
4 3152(d)).

5 (3) GEOGRAPHIC DISTRIBUTION.—The Sec-  
6 retary shall, to the extent practicable, award grants  
7 under this section in a manner that provides for a  
8 reasonable geographic distribution, except that the  
9 Secretary shall not be required to award grants  
10 equally among different regions of the United  
11 States.

12 (g) MATCHING REQUIREMENTS.—A grant awarded  
13 under this section may not be used to satisfy any non-  
14 Federal funds matching requirement under any other pro-  
15 vision of law.

16 (h) GRANTEE DATA COLLECTION.—

17 (1) IN GENERAL.—A grantee, with respect to  
18 the educational or career training program for which  
19 the grantee received a grant under this section, shall  
20 collect and report to the Secretary on an annual  
21 basis the following:

22 (A) The number of participants enrolled in  
23 the educational or career training program.

1 (B) The number of participants that have  
2 completed the educational or career training  
3 programing the last 12 months.

4 (C) The services received by such partici-  
5 pants, including a description of training, edu-  
6 cation, and supportive services.

7 (D) The amount spent by the grantee per  
8 participant.

9 (E) The percentage of job placement of  
10 participants in the offshore wind industry or re-  
11 lated fields.

12 (F) The percentage of employment reten-  
13 tion—

14 (i) if the eligible entity is not an insti-  
15 tution of higher education, 1 year after  
16 completion of the educational or career  
17 training program; or

18 (ii) if the eligible entity is an institu-  
19 tion of higher education, 1 year after com-  
20 pletion of the educational or career train-  
21 ing program or 1 year after the participant  
22 is no longer enrolled in such institution of  
23 higher education, whichever is later.

24 (G) The percentage of program partici-  
25 pants who obtain a recognized postsecondary

1 credential, or a secondary school diploma or its  
2 recognized equivalent during participation in or  
3 within 1 year after exit from the program.

4 (2) DISAGGREGATION OF DATA.—The data col-  
5 lected and reported under this subsection shall be  
6 disaggregated by each population specified in section  
7 3(24) of the Workforce Innovation and Opportunity  
8 Act (29 U.S.C. 3102(24)) and by race, ethnicity,  
9 sex, and age.

10 (3) ASSISTANCE FROM SECRETARY.—The Sec-  
11 retary shall assist grantees in the collection of data  
12 under this subsection by making available, where  
13 practicable, low-cost means of tracking the labor  
14 market outcomes of participants (including through  
15 coordination with the Secretary of Labor) and by  
16 providing standardized reporting forms, where ap-  
17 propriate. The Secretary shall provide technical as-  
18 sistance and oversight to assist the eligible entities  
19 in applying for and administering grants.

20 (j) GUIDELINES.—Not later than 90 days after the  
21 date of the enactment of this section, the Secretary shall—

22 (1) promulgate guidelines for the submission of  
23 grant proposals; and

24 (2) publish and maintain such guidelines on a  
25 public website of the Secretary.



1 (k) REPORTING REQUIREMENT.—Not later than 18  
2 months after the date of the enactment of this section,  
3 and every 2 years thereafter, the Secretary shall submit  
4 a report to the Committee on Natural Resources of the  
5 House of Representatives, the Committee on Energy and  
6 Natural Resources of the Senate, the Committee on Edu-  
7 cation and Labor of the House of Representatives, and  
8 the Committee on Health, Education, Labor, and Pen-  
9 sions of the Senate on the grant program established by  
10 this section. The report shall include a description of the  
11 grantees and the activities for which grantees used a grant  
12 awarded under this section.

13 (l) AUTHORIZATION OF APPROPRIATIONS.—There  
14 are authorized to be appropriated for purposes of this sec-  
15 tion \$25,000,000 for each of fiscal years 2021 through  
16 2025. The Secretary may use not more than 2 percent  
17 of the amount appropriated for each fiscal year for admin-  
18 istrative expenses, including the expenses of providing the  
19 technical assistance and oversight activities.

20 (m) DEFINITIONS.—In this section:

21 (1) APPRENTICESHIP, APPRENTICESHIP PRO-  
22 GRAM.—The term “apprenticeship” or “apprentice-  
23 ship program” means an apprenticeship program  
24 registered under the Act of August 16, 1937 (com-  
25 monly known as the “National Apprenticeship Act”;

1       50 Stat. 664, chapter 663; 29 U.S.C. 50 et seq.), in-  
2       cluding any requirement, standard, or rule promul-  
3       gated under such Act, as such requirement, stand-  
4       ard, or rule was in effect on December 30, 2019.  
5       Any funds made available under this Act that are  
6       used to fund an apprenticeship or apprenticeship  
7       program shall only be used for, or provided to, an  
8       apprenticeship or apprenticeship program that meets  
9       this definition, including any funds awarded for the  
10      purposes of grants, contracts, or cooperative agree-  
11      ments, or the development, implementation, or ad-  
12      ministration, of an apprenticeship or an apprentice-  
13      ship program.

14           (2) COMMUNITY COLLEGE.—The term “commu-  
15      nity college” has the meaning given the term “junior  
16      or community college” in section 312(f) of the High-  
17      er Education Act of 1965 (20 U.S.C. 1058(f)).

18           (3) ELIGIBLE ENTITY.—The term “eligible enti-  
19      ty” means an entity that is—

20                   (A) an institution of higher education, as  
21                   such term is defined in section 101 of the High-  
22                   er Education Act of 1965 (20 U.S.C. 1001)); or

23                   (B) a labor organization or a joint labor  
24                   management organization.

1           (4) GRANTEE.—The term “grantee” means an  
2           eligible entity that has received a grant under this  
3           section.

4           (5) LEAD APPLICANT.—The term “lead appli-  
5           cant” means the eligible entity that is primarily re-  
6           sponsible for the preparation, conduct, and adminis-  
7           tration of the project for which the grant was award-  
8           ed.

9           (6) SECRETARY.—The term “Secretary” means  
10          the Secretary of the Interior, in consultation with  
11          the Secretary of Energy, the Secretary of Education,  
12          and the Secretary of Labor.

13          (7) CARL D. PERKINS CAREER AND TECHNICAL  
14          EDUCATION ACT TERMS.—The terms “area career  
15          and technical education school”, “qualified inter-  
16          mediary”, “Tribal educational agency”, and “work-  
17          based learning” have the meanings given the terms  
18          in section 3 of the Carl D. Perkins Career and Tech-  
19          nical Education Act of 2006 (20 U.S.C. 2302).

20          (8) WORKFORCE INNOVATION AND OPPOR-  
21          TUNITY ACT TERMS.—The terms “career pathway”,  
22          “dislocated worker”, “English language acquisition”,  
23          “in-school youth”, “individuals with barriers to em-  
24          ployment”, “industry or sector partnership”, “on-  
25          the-job training”, “out-of-school youth”, “recognized

1 postsecondary credential”, “supportive services”,  
2 have the meanings given the terms in section 3 of  
3 the Workforce Innovation and Opportunity Act (29  
4 U.S.C. 3102).

5 **SEC. 12302. DATA PRESERVATION.**

6 Subsection (k) of the National Geological and Geo-  
7 physical Data Preservation Program Act of 2005 (42  
8 U.S.C. 15908(k)) is amended by striking “2006 through  
9 2010” and inserting “2021 through 2025”.

10 **Subtitle D—Clean Energy and**  
11 **Sustainability Accelerator**

12 **SEC. 12401. CLEAN ENERGY AND SUSTAINABILITY ACCEL-**  
13 **ERATOR.**

14 Title XVI of the Energy Policy Act of 2005 (Public  
15 Law 109–58, as amended) is amended by adding at the  
16 end the following new subtitle:

17 **“Subtitle C—Clean Energy and**  
18 **Sustainability Accelerator**

19 **“SEC. 1621. DEFINITIONS.**

20 “In this subtitle:

21 “(1) **ACCELERATOR.**—The term ‘Accelerator’  
22 means the Clean Energy and Sustainability Accel-  
23 erator established under section 1622.

24 “(2) **BOARD.**—The term ‘Board’ means the  
25 Board of Directors of the Accelerator.

1           “(3) CHIEF EXECUTIVE OFFICER.—The term  
2           ‘chief executive officer’ means the chief executive of-  
3           ficer of the Accelerator.

4           “(4) CLIMATE-IMPACTED COMMUNITIES.—The  
5           term ‘climate-impacted communities’ includes—

6                   “(A) communities of color, which include  
7                   any geographically distinct area the population  
8                   of color of which is higher than the average  
9                   population of color of the State in which the  
10                  community is located;

11                  “(B) communities that are already or are  
12                  likely to be the first communities to feel the di-  
13                  rect negative effects of climate change;

14                  “(C) distressed neighborhoods, dem-  
15                  onstrated by indicators of need, including pov-  
16                  erty, childhood obesity rates, academic failure,  
17                  and rates of juvenile delinquency, adjudication,  
18                  or incarceration;

19                  “(D) low-income communities, defined as  
20                  any census block group in which 30 percent or  
21                  more of the population are individuals with low  
22                  income;

23                  “(E) low-income households, defined as a  
24                  household with annual income equal to, or less  
25                  than, the greater of—

1 “(i) an amount equal to 80 percent of  
2 the median income of the area in which the  
3 household is located, as reported by the  
4 Department of Housing and Urban Devel-  
5 opment; and

6 “(ii) 200 percent of the Federal pov-  
7 erty line; and

8 “(F) rural areas, which include any area  
9 other than—

10 “(i) a city or town that has a popu-  
11 lation of greater than 50,000 inhabitants;  
12 and

13 “(ii) any urbanized area contiguous  
14 and adjacent to a city or town described in  
15 clause (i).

16 “(5) CLIMATE RESILIENT INFRASTRUCTURE.—  
17 The term ‘climate resilient infrastructure’ means  
18 any project that builds or enhances infrastructure so  
19 that such infrastructure—

20 “(A) is planned, designed, and operated in  
21 a way that anticipates, prepares for, and adapts  
22 to changing climate conditions; and

23 “(B) can withstand, respond to, and re-  
24 cover rapidly from disruptions caused by these  
25 climate conditions.

1           “(6) ELECTRIFICATION.—The term ‘electrifica-  
2           tion’ means the installation, construction, or use of  
3           end-use electric technology that replaces existing fos-  
4           sil-fuel-based technology.

5           “(7) ENERGY EFFICIENCY.—The term ‘energy  
6           efficiency’ means any project, technology, function,  
7           or measure that results in the reduction of energy  
8           use required to achieve the same level of service or  
9           output prior to the application of such project, tech-  
10          nology, function, or measure, or substantially re-  
11          duces greenhouse gas emissions relative to emissions  
12          that would have occurred prior to the application of  
13          such project, technology, function, or measure.

14          “(8) FUEL SWITCHING.—The term ‘fuel switch-  
15          ing’ means any project that replaces a fossil-fuel-  
16          based heating system with an electric-powered sys-  
17          tem or one powered by biomass-generated heat.

18          “(9) GREEN BANK.—The term ‘green bank’  
19          means a dedicated public or nonprofit specialized fi-  
20          nance entity that—

21                 “(A) is designed to drive private capital  
22                 into market gaps for low- and zero-emission  
23                 goods and services;

24                 “(B) uses finance tools to mitigate climate  
25                 change;

1 “(C) does not take deposits;

2 “(D) is funded by government, public, pri-  
3 vate, or charitable contributions; and

4 “(E) invests or finances projects—

5 “(i) alone; or

6 “(ii) in conjunction with other inves-  
7 tors.

8 “(10) QUALIFIED PROJECTS.—The term ‘quali-  
9 fied projects’ means the following kinds of tech-  
10 nologies and activities that are eligible for financing  
11 and investment from the Clean Energy and Sustain-  
12 ability Accelerator, either directly or through State  
13 and local green banks funded by the Clean Energy  
14 and Sustainability Accelerator:

15 “(A) Renewable energy generation, includ-  
16 ing the following:

17 “(i) Solar.

18 “(ii) Wind.

19 “(iii) Geothermal.

20 “(iv) Hydropower.

21 “(v) Ocean and hydrokinetic.

22 “(vi) Fuel cell.

23 “(B) Building energy efficiency, fuel  
24 switching, and electrification.

25 “(C) Industrial decarbonization.



1           “(D) Grid technology such as trans-  
2 mission, distribution, and storage to support  
3 clean energy distribution, including smart-grid  
4 applications.

5           “(E) Agriculture and forestry projects that  
6 reduce net greenhouse gas emissions.

7           “(F) Clean transportation, including the  
8 following:

9               “(i) Battery electric vehicles.

10              “(ii) Plug-in hybrid electric vehicles.

11              “(iii) Hydrogen vehicles.

12              “(iv) Other zero-emissions fueled vehi-  
13 cles.

14              “(v) Related vehicle charging and  
15 fueling infrastructure.

16           “(G) Climate resilient infrastructure.

17           “(H) Any other key areas identified by the  
18 Board as consistent with the mandate of the  
19 Accelerator as described in section 1623.

20           “(11) RENEWABLE ENERGY GENERATION.—

21           The term ‘renewable energy generation’ means elec-  
22 tricity created by sources that are continually replen-  
23 ished by nature, such as the sun, wind, and water.

1   **“SEC. 1622. ESTABLISHMENT.**

2           “(a) IN GENERAL.—Not later than 1 year after the  
3 date of enactment of this subtitle, there shall be estab-  
4 lished a nonprofit corporation to be known as the ‘Clean  
5 Energy and Sustainability Accelerator’.

6           “(b) LIMITATION.—The Accelerator shall not be an  
7 agency or instrumentality of the Federal Government.

8           “(c) FULL FAITH AND CREDIT.—The full faith and  
9 credit of the United States shall not extend to the Accel-  
10 erator.

11          “(d) NONPROFIT STATUS.—The Accelerator shall  
12 maintain its status as an organization exempt from tax-  
13 ation under the Internal Revenue Code of 1986 (26 U.S.C.  
14 1 et seq.).

15   **“SEC. 1623. MANDATE.**

16          “The Accelerator shall make the United States a  
17 world leader in combating the causes and effects of climate  
18 change through the rapid deployment of mature tech-  
19 nologies and scaling of new technologies by maximizing  
20 the reduction of emissions in the United States for every  
21 dollar deployed by the Accelerator, including by—

22           “(1) providing financing support for invest-  
23 ments in the United States in low- and zero-emis-  
24 sions technologies and processes in order to rapidly  
25 accelerate market penetration;

1           “(2) catalyzing and mobilizing private capital  
2           through Federal investment and supporting a more  
3           robust marketplace for clean technologies, while  
4           avoiding competition with private investment;

5           “(3) enabling climate-impacted communities to  
6           benefit from and afford projects and investments  
7           that reduce emissions;

8           “(4) providing support for workers and commu-  
9           nities impacted by the transition to a low-carbon  
10          economy;

11          “(5) supporting the creation of green banks  
12          within the United States where green banks do not  
13          exist; and

14          “(6) causing the rapid transition to a clean en-  
15          ergy economy without raising energy costs to end  
16          users and seeking to lower costs where possible.

17   **“SEC. 1624. FINANCE AND INVESTMENT DIVISION.**

18          “(a) IN GENERAL.—There shall be within the Accel-  
19          erator a finance and investment division, which shall be  
20          responsible for—

21               “(1) the Accelerator’s greenhouse gas emissions  
22               mitigation efforts by directly financing qualifying  
23               projects or doing so indirectly by providing capital to  
24               State and local green banks;

1           “(2) originating, evaluating, underwriting, and  
2           closing the Accelerator’s financing and investment  
3           transactions in qualified projects;

4           “(3) partnering with private capital providers  
5           and capital markets to attract coinvestment from  
6           private banks, investors, and others in order to drive  
7           new investment into underpenetrated markets, to in-  
8           crease the efficiency of private capital markets with  
9           respect to investing in greenhouse gas reduction  
10          projects, and to increase total investment caused by  
11          the Accelerator;

12          “(4) managing the Accelerator’s portfolio of as-  
13          sets to ensure performance and monitor risk;

14          “(5) ensuring appropriate debt and risk mitiga-  
15          tion products are offered; and

16          “(6) overseeing prudent, noncontrolling equity  
17          investments.

18          “(b) PRODUCTS AND INVESTMENT TYPES.—The fi-  
19          nance and investment division of the Accelerator may pro-  
20          vide capital to qualified projects in the form of—

21               “(1) senior, mezzanine, and subordinated debt;

22               “(2) credit enhancements including loan loss re-  
23               serves and loan guarantees;

24               “(3) aggregation and warehousing;

25               “(4) equity capital; and

1           “(5) any other financial product approved by  
2       the Board.

3           “(c) STATE AND LOCAL GREEN BANK CAPITALIZA-  
4       TION.—The finance and investment division of the Accel-  
5       erator shall make capital available to State and local green  
6       banks to enable such banks to finance qualifying projects  
7       in their markets that are better served by a locally based  
8       entity, rather than through direct investment by the Accel-  
9       erator.

10          “(d) INVESTMENT COMMITTEE.—The debt, risk miti-  
11       gation, and equity investments made by the Accelerator  
12       shall be—

13           “(1) approved by the investment committee of  
14       the Board; and

15           “(2) consistent with an investment policy that  
16       has been established by the investment committee of  
17       the Board in consultation with the risk management  
18       committee of the Board.

19       **“SEC. 1625. START-UP DIVISION.**

20          “‘There shall be within the Accelerator a Start-up Di-  
21       vision, which shall be responsible for providing technical  
22       assistance and start-up funding to States and other polit-  
23       ical subdivisions that do not have green banks to establish  
24       green banks in those States and political subdivisions, in-

cluding by working with relevant stakeholders in those States and political subdivisions.

**“SEC. 1626. ZERO-EMISSIONS FLEET AND RELATED INFRA-  
STRUCTURE FINANCING PROGRAM.**

“Not later than 1 year after the date of establishment of the Accelerator, the Accelerator shall explore the establishment of a program to provide low- and zero-interest loans, up to 30 years in length, to any school, metropolitan planning organization, or nonprofit organization seeking financing for the acquisition of zero-emissions vehicle fleets or associated infrastructure to support zero-emissions vehicle fleets.

**“SEC. 1627. PROJECT PRIORITIZATION AND REQUIRE-  
MENTS.**

“(a) EMISSIONS REDUCTION MANDATE.—In investing in projects that mitigate greenhouse gas emissions, the Accelerator shall maximize the reduction of emissions in the United States for every dollar deployed by the Accelerator.

“(b) ENVIRONMENTAL JUSTICE PRIORITIZATION.—

“(1) IN GENERAL.—In order to address environmental justice needs, the Accelerator shall, as applicable, prioritize the provision of program benefits and investment activity that are expected to directly or indirectly result in the deployment of projects to

1       serve, as a matter of official policy, climate-impacted  
2       communities.

3               “(2) MINIMUM PERCENTAGE.—The Accelerator  
4       shall ensure that over the 30-year period of its char-  
5       ter 20 percent of its investment activity is directed  
6       to serve climate-impacted communities.

7       “(c) CONSUMER PROTECTION.—

8               “(1) PRIORITIZATION.—Consistent with man-  
9       date under section 1623 to maximize the reduction  
10      of emissions in the United States for every dollar de-  
11      ployed by the Accelerator, the Accelerator shall  
12      prioritize qualified projects according to benefits  
13      conferred on consumers and affected communities.

14              “(2) CONSUMER CREDIT PROTECTION.—The  
15      Accelerator shall ensure that any residential energy  
16      efficiency or distributed clean energy project in  
17      which the Accelerator invests directly or indirectly  
18      complies with the requirements of the Consumer  
19      Credit Protection Act (15 U.S.C. 1601 et seq.), in-  
20      cluding, in the case of a financial product that is a  
21      residential mortgage loan, any requirements of title  
22      I of that Act relating to residential mortgage loans  
23      (including any regulations promulgated by the Bu-  
24      reau of Consumer Financial Protection under sec-

1       tion 129C(b)(3)(C) of that Act (15 U.S.C.  
2       1639c(b)(3)(C))).

3       “(d) LABOR.—

4           “(1) IN GENERAL.—The Accelerator shall en-  
5       sure that laborers and mechanics employed by con-  
6       tractors and subcontractors in construction work fi-  
7       nanced directly by the Accelerator will be paid wages  
8       not less than those prevailing on similar construction  
9       in the locality, as determined by the Secretary of  
10      Labor under sections 3141 through 3144, 3146, and  
11      3147 of title 40, United States Code.

12          “(2) PROJECT LABOR AGREEMENT.—The Accel-  
13      erator shall ensure that projects financed directly by  
14      the Accelerator with total capital costs of  
15      \$100,000,000 or greater utilize a project labor  
16      agreement.

17   **“SEC. 1628. BOARD OF DIRECTORS.**

18          “(a) IN GENERAL.—The Accelerator shall operate  
19      under the direction of a Board of Directors, which shall  
20      be composed of seven members.

21          “(b) INITIAL COMPOSITION AND TERMS.—

22           “(1) SELECTION.—The initial members of the  
23      Board shall be selected as follows:

24           “(A) APPOINTED MEMBERS.—Three mem-  
25      bers shall be appointed by the President, with



1 the advice and consent of the Senate, of whom  
2 no more than two shall belong to the same po-  
3 litical party.

4 “(B) ELECTED MEMBERS.—Four members  
5 shall be elected unanimously by the three mem-  
6 bers appointed and confirmed pursuant to sub-  
7 paragraph (A).

8 “(2) TERMS.—The terms of the initial members  
9 of the Board shall be as follows:

10 “(A) The three members appointed and  
11 confirmed under paragraph (1)(A) shall have  
12 initial 5-year terms.

13 “(B) Of the four members elected under  
14 paragraph (1)(B), two shall have initial 3-year  
15 terms, and two shall have initial 4-year terms.

16 “(c) SUBSEQUENT COMPOSITION AND TERMS.—

17 “(1) SELECTION.—Except for the selection of  
18 the initial members of the Board for their initial  
19 terms under subsection (b), the members of the  
20 Board shall be elected by the members of the Board.

21 “(2) DISQUALIFICATION.—A member of the  
22 Board shall be disqualified from voting for any posi-  
23 tion on the Board for which such member is a can-  
24 didate.

1           “(3) TERMS.—All members elected pursuant to  
2       paragraph (1) shall have a term of 5 years.

3           “(d) QUALIFICATIONS.—The members of the Board  
4       shall collectively have expertise in—

5           “(1) the fields of clean energy, electric utilities,  
6       industrial decarbonization, clean transportation, re-  
7       siliency, and agriculture and forestry practices;

8           “(2) climate change science;

9           “(3) finance and investments; and

10          “(4) environmental justice and matters related  
11       to the energy and environmental needs of climate-  
12       impacted communities.

13          “(e) RESTRICTION ON MEMBERSHIP.—No officer or  
14       employee of the Federal or any other level of government  
15       may be appointed or elected as a member of the Board.

16          “(f) QUORUM.—Five members of the Board shall  
17       constitute a quorum.

18          “(g) BYLAWS.—

19               “(1) IN GENERAL.—The Board shall adopt, and  
20       may amend, such bylaws as are necessary for the  
21       proper management and functioning of the Accel-  
22       erator.

23               “(2) OFFICERS.—In the bylaws described in  
24       paragraph (1), the Board shall—

1                   “(A) designate the officers of the Accel-  
2                   erator; and

3                   “(B) prescribe the duties of those officers.

4           “(h) VACANCIES.—Any vacancy on the Board shall  
5 be filled through election by the Board.

6           “(i) INTERIM APPOINTMENTS.—A member elected to  
7 fill a vacancy occurring before the expiration of the term  
8 for which the predecessor of that member was appointed  
9 or elected shall serve for the remainder of the term for  
10 which the predecessor of that member was appointed or  
11 elected.

12          “(j) REAPPOINTMENT.—A member of the Board may  
13 be elected for not more than one additional term of service  
14 as a member of the Board.

15          “(k) CONTINUATION OF SERVICE.—A member of the  
16 Board whose term has expired may continue to serve on  
17 the Board until the date on which a successor member  
18 is elected.

19          “(l) CHIEF EXECUTIVE OFFICER.—The Board shall  
20 appoint a chief executive officer who shall be responsible  
21 for—

22                   “(1) hiring employees of the Accelerator;

23                   “(2) establishing the two divisions of the Accel-  
24 erator described in sections 1624 and 1625; and

1           “(3) performing any other tasks necessary for  
2           the day-to-day operations of the Accelerator.

3           “(m) ADVISORY COMMITTEE.—

4           “(1) ESTABLISHMENT.—The Accelerator shall  
5           establish an advisory committee (in this subsection  
6           referred to as the ‘advisory committee’), which shall  
7           be composed of not more than 13 members ap-  
8           pointed by the Board on the recommendation of the  
9           president of the Accelerator.

10          “(2) MEMBERS.—Members of the advisory com-  
11          mittee shall be broadly representative of interests  
12          concerned with the environment, production, com-  
13          merce, finance, agriculture, forestry, labor, services,  
14          and State Government. Of such members—

15               “(A) not fewer than three shall be rep-  
16               resentatives of the small business community;

17               “(B) not fewer than two shall be rep-  
18               resentatives of the labor community, except that  
19               no two members may be from the same labor  
20               union;

21               “(C) not fewer than two shall be represent-  
22               atives of the environmental nongovernmental  
23               organization community, except that no two  
24               members may be from the same environmental  
25               organization;

1           “(D) not fewer than two shall be rep-  
2           resentatives of the environmental justice non-  
3           governmental organization community, except  
4           that no two members may be from the same en-  
5           vironmental organization;

6           “(E) not fewer than two shall be rep-  
7           resentatives of the consumer protection and fair  
8           lending community, except that no two mem-  
9           bers may be from the same consumer protection  
10          or fair lending organization; and

11          “(F) not fewer than two shall be represent-  
12          atives of the financial services industry with  
13          knowledge of and experience in financing trans-  
14          actions for clean energy and other sustainable  
15          infrastructure assets.

16          “(3) MEETINGS.—The advisory committee shall  
17          meet not less frequently than once each quarter.

18          “(4) DUTIES.—The advisory committee shall—

19               “(A) advise the Accelerator on the pro-  
20               grams undertaken by the Accelerator; and

21               “(B) submit to the Congress an annual re-  
22               port with comments from the advisory com-  
23               mittee on the extent to which the Accelerator is  
24               meeting the mandate described in section 1623,  
25               including any suggestions for improvement.

1 “(n) CHIEF RISK OFFICER.—

2 “(1) APPOINTMENT.—Subject to the approval  
3 of the Board, the chief executive officer shall appoint  
4 a chief risk officer from among individuals with ex-  
5 perience at a senior level in financial risk manage-  
6 ment, who—

7 “(A) shall report directly to the Board;  
8 and

9 “(B) shall be removable only by a majority  
10 vote of the Board.

11 “(2) DUTIES.—The chief risk officer, in coordi-  
12 nation with the risk management and audit commit-  
13 tees established under section 1631, shall develop,  
14 implement, and manage a comprehensive process for  
15 identifying, assessing, monitoring, and limiting risks  
16 to the Accelerator, including the overall portfolio di-  
17 versification of the Accelerator.

18 **“SEC. 1629. ADMINISTRATION.**

19 “(a) CAPITALIZATION.—

20 “(1) IN GENERAL.—To the extent and in the  
21 amounts provided in advance in appropriations Acts,  
22 the Secretary of Energy shall transfer to the Accel-  
23 erator—

1           “(A) \$10,000,000,000 on the date on  
2           which the Accelerator is established under sec-  
3           tion 1622; and

4           “(B) \$2,000,000,000 on October 1 of each  
5           of the 5 fiscal years following that date.

6           “(2) AUTHORIZATION OF APPROPRIATIONS.—  
7           For purposes of the transfers under paragraph (1),  
8           there are authorized to be appropriated—

9           “(A) \$10,000,000,000 for the fiscal year in  
10          which the Accelerator is established under sec-  
11          tion 1622; and

12          “(B) \$2,000,000,000 for each of the 5 suc-  
13          ceeding fiscal years.

14          “(b) CHARTER.—The Accelerator shall establish a  
15          charter, the term of which shall be 30 years.

16          “(c) OPERATIONAL FUNDS.—To sustain operations,  
17          the Accelerator shall manage revenue from financing fees,  
18          interest, repaid loans, and other types of funding.

19          “(d) REPORT.—The Accelerator shall submit on a  
20          quarterly basis to the relevant committees of Congress a  
21          report that describes the financial activities, emissions re-  
22          ductions, and private capital mobilization metrics of the  
23          Accelerator for the previous quarter.

24          “(e) RESTRICTION.—The Accelerator shall not accept  
25          deposits.

1 “(f) COMMITTEES.—The Board shall establish com-  
2 mittees and subcommittees, including—

3 “(1) an investment committee; and

4 “(2) in accordance with section 1630—

5 “(A) a risk management committee; and

6 “(B) an audit committee.

7 **“SEC. 1630. ESTABLISHMENT OF RISK MANAGEMENT COM-  
8 MITTEE AND AUDIT COMMITTEE.**

9 “(a) IN GENERAL.—To assist the Board in fulfilling  
10 the duties and responsibilities of the Board under this sub-  
11 title, the Board shall establish a risk management com-  
12 mittee and an audit committee.

13 “(b) DUTIES AND RESPONSIBILITIES OF RISK MAN-  
14 AGEMENT COMMITTEE.—Subject to the direction of the  
15 Board, the risk management committee established under  
16 subsection (a) shall establish policies for and have over-  
17 sight responsibility for—

18 “(1) formulating the risk management policies  
19 of the operations of the Accelerator;

20 “(2) reviewing and providing guidance on oper-  
21 ation of the global risk management framework of  
22 the Accelerator;

23 “(3) developing policies for—

24 “(A) investment;

25 “(B) enterprise risk management;



1 “(C) monitoring; and

2 “(D) management of strategic,  
3 reputational, regulatory, operational, develop-  
4 mental, environmental, social, and financial  
5 risks; and

6 “(4) developing the risk profile of the Accel-  
7 erator, including—

8 “(A) a risk management and compliance  
9 framework; and

10 “(B) a governance structure to support  
11 that framework.

12 “(c) DUTIES AND RESPONSIBILITIES OF AUDIT COM-  
13 MITTEE.—Subject to the direction of the Board, the audit  
14 committee established under subsection (a) shall have  
15 oversight responsibility for—

16 “(1) the integrity of—

17 “(A) the financial reporting of the Accel-  
18 erator; and

19 “(B) the systems of internal controls re-  
20 garding finance and accounting;

21 “(2) the integrity of the financial statements of  
22 the Accelerator;

23 “(3) the performance of the internal audit func-  
24 tion of the Accelerator; and

1           “(4) compliance with the legal and regulatory  
2           requirements related to the finances of the Accel-  
3           erator.

4   **“SEC. 1631. OVERSIGHT.**

5           “(a) EXTERNAL OVERSIGHT.—The inspector general  
6           of the Department of Energy shall have oversight respon-  
7           sibilities over the Accelerator.

8           “(b) REPORTS AND AUDIT.—

9           “(1) ANNUAL REPORT.—The Accelerator shall  
10          publish an annual report which shall be transmitted  
11          by the Accelerator to the President and the Con-  
12          gress.

13          “(2) ANNUAL AUDIT OF ACCOUNTS.—The ac-  
14          counts of the Accelerator shall be audited annually.  
15          Such audits shall be conducted in accordance with  
16          generally accepted auditing standards by inde-  
17          pendent certified public accountants who are cer-  
18          tified by a regulatory authority of the jurisdiction in  
19          which the audit is undertaken.

20          “(3) ADDITIONAL AUDITS.—In addition to the  
21          annual audits under paragraph (2), the financial  
22          transactions of the Accelerator for any fiscal year  
23          during which Federal funds are available to finance  
24          any portion of its operations may be audited by the  
25          Government Accountability Office in accordance with

1 such rules and regulations as may be prescribed by  
2 the Comptroller General of the United States.

3 **“SEC. 1632. MAXIMUM CONTINGENT LIABILITY.**

4 “The maximum contingent liability of the Accelerator  
5 that may be outstanding at any time shall be not more  
6 than \$70,000,000,000 in the aggregate.”.

7 **Subtitle E—Scientific Integrity**

8 **SEC. 12501. SENSE OF CONGRESS.**

9 It is the sense of Congress that—

10 (1) science and the scientific process should  
11 help inform and guide public policy decisions on a  
12 wide range of issues, including improvement of pub-  
13 lic health, protection of the environment, and protec-  
14 tion of national security;

15 (2) the public must be able to trust the science  
16 and scientific process informing public policy deci-  
17 sions;

18 (3) science, the scientific process, and the com-  
19 munication of science should be free from politics,  
20 ideology, and financial conflicts of interest;

21 (4) policies and procedures that ensure the in-  
22 tegrity of the conduct and communication of publicly  
23 funded science are critical to ensuring public trust;

24 (5) a Federal agency that funds, conducts, or  
25 oversees research should not suppress, alter, inter-

1       fere with, or otherwise impede the timely commu-  
2       nication and open exchange of data and findings to  
3       other agencies, policymakers, and the public of re-  
4       search conducted by a scientist or engineer employed  
5       or contracted by a Federal agency that funds, con-  
6       ducts, or oversees scientific research;

7           (6) Federal agencies that fund, conduct, or  
8       oversee research should work to prevent the suppres-  
9       sion or distortion of the data and findings;

10          (7) under the First Amendment to the Con-  
11       stitution, citizens of the United States have the right  
12       to “petition the government for a redress of griev-  
13       ances”; and

14          (8) Congress has further protected those rights  
15       under section 7211 of title 5, United States Code,  
16       which states, “the right of employees, individually or  
17       collectively, to petition Congress or a member of  
18       Congress . . . may not be interfered with or denied”.

19   **SEC. 12502. AMENDMENT TO AMERICA COMPETES ACT.**

20       Section 1009 of the America COMPETES Act (42  
21   U.S.C. 6620) is amended by striking subsections (a) and  
22   (b) and inserting the following:

23       “(a) SCIENTIFIC INTEGRITY POLICIES.—

1           “(1) IN GENERAL.—Not later than 90 days  
2           after the date of enactment of the Scientific Integrity Act, the head of each covered agency shall—

3                   “(A) adopt and enforce a scientific integrity policy in accordance with subsections (b)  
4                   and (c); and

5                   “(B) submit such policy to the Director of  
6                   the Office of Science and Technology Policy for  
7                   approval.

8           “(2) PUBLICATION.—Not later than 30 days  
9           after the Director of the Office of Science and Technology Policy approves the scientific integrity policy  
10           under paragraph (1), the head of each covered agency shall—

11                   “(A) make such policy available to the  
12                   public on the website of the agency; and

13                   “(B) submit such policy to the relevant  
14                   Committees of Congress.

15           “(b) REQUIREMENTS.—A scientific integrity policy  
16           under subsection (a)—

17                   “(1) shall prohibit any covered individual  
18                   from—

19                   “(A) engaging in dishonesty, fraud, deceit,  
20                   misrepresentation, coercive manipulation, or  
21                   other scientific or research misconduct;

1           “(B) suppressing, altering, interfering  
2 with, delaying without scientific merit, or other-  
3 wise impeding the release and communication  
4 of, scientific or technical findings;

5           “(C) intimidating or coercing an individual  
6 to alter or censor, attempting to intimidate or  
7 coerce an individual to alter or censor, or retali-  
8 ating against an individual for failure to alter  
9 or censor, scientific or technical findings; or

10           “(D) implementing an institutional barrier  
11 to cooperation with scientists outside the cov-  
12 ered agency and the timely communication of  
13 scientific or technical findings;

14           “(2) shall allow a covered individual to—

15           “(A) disseminate scientific or technical  
16 findings, subject to existing law, by—

17           “(i) participating in scientific con-  
18 ferences; and

19           “(ii) seeking publication in online and  
20 print publications through peer-reviewed,  
21 professional, or scholarly journals;

22           “(B) sit on scientific advisory or governing  
23 boards;

1           “(C) join or hold leadership positions on  
2           scientific councils, societies, unions, and other  
3           professional organizations;

4           “(D) contribute to the academic peer-re-  
5           view process as reviewers or editors; and

6           “(E) participate and engage with the sci-  
7           entific community;

8           “(3) may require a covered individual to, before  
9           disseminating scientific or technical findings as de-  
10          scribed in paragraph (2)(A), submit such findings to  
11          the agency for the purpose of review by the agency  
12          of the data and findings for technical accuracy if the  
13          scientific integrity policy outlines a clear and con-  
14          sistent process for such review; and

15          “(4) shall require that—

16               “(A) scientific conclusions are not made  
17               based on political considerations;

18               “(B) the selection and retention of can-  
19               didates for science and technology positions in  
20               the covered agency are based primarily on the  
21               candidate’s expertise, scientific credentials, ex-  
22               perience, and integrity;

23               “(C) personnel actions regarding covered  
24               individuals, except for political appointees, are

1 not taken on the basis of political consideration  
2 or ideology;

3 “(D) covered individuals adhere to the  
4 highest ethical and professional standards in  
5 conducting their research and disseminating  
6 their findings;

7 “(E) the appropriate rules, procedures,  
8 and safeguards are in place to ensure the integ-  
9 rity of the scientific process within the covered  
10 agency;

11 “(F) scientific or technological information  
12 considered in policy decisions is subject to well-  
13 established scientific processes, including peer  
14 review where appropriate;

15 “(G) procedures, including procedures with  
16 respect to applicable whistleblower protections,  
17 are in place as are necessary to ensure the in-  
18 tegrity of scientific and technological informa-  
19 tion and processes on which the covered agency  
20 relies in its decision making or otherwise uses;  
21 and

22 “(H) enforcement of such policy is con-  
23 sistent with the processes for an administrative  
24 hearing and an administrative appeal.



1 “(c) IMPLEMENTATION.—In carrying out subsection  
2 (a), the head of each covered agency shall—

3 “(1) design the scientific integrity policy to  
4 apply with respect to the covered agency;

5 “(2) ensure that such policy is clear with re-  
6 spect to what activities are permitted and what ac-  
7 tivities are not permitted;

8 “(3) ensure that there is a process for individ-  
9 uals not employed or contracted by the agency, in-  
10 cluding grantees, collaborators, partners, and volun-  
11 teers, to report violations of the scientific integrity  
12 policy;

13 “(4) enforce such policy uniformly throughout  
14 the covered agency; and

15 “(5) make such policy available to the public,  
16 employees, private contractors, and grantees of the  
17 covered agency.

18 “(d) SCIENTIFIC INTEGRITY OFFICER.—Not later  
19 than 90 days after the date of enactment of this Act, each  
20 covered agency shall appoint a Scientific Integrity Officer,  
21 who shall—

22 “(1) be a career employee at the covered agency  
23 in a professional position;

24 “(2) have technical knowledge and expertise in  
25 conducting and overseeing scientific research;

1 “(3) direct the activities and duties described in  
2 subsections (e), (f), and (g); and

3 “(4) work closely with the inspector general of  
4 the covered agency, as appropriate.

5 “(e) ADMINISTRATIVE PROCESS AND TRAINING.—

6 Not later than 180 days after the date of enactment of  
7 this Act, the head of each covered agency shall establish—

8 “(1) an administrative process and administra-  
9 tive appeal process for dispute resolution consistent  
10 with the scientific integrity policy of the covered  
11 agency adopted under subsection (a); and

12 “(2) a training program to provide—

13 “(A) regular scientific integrity and ethics  
14 training to employees and contractors of the  
15 covered agency;

16 “(B) new covered employees with training  
17 within one month of commencing employment;

18 “(C) information to ensure that covered in-  
19 dividuals are fully aware of their rights and re-  
20 sponsibilities regarding the conduct of scientific  
21 research, publication of scientific research, and  
22 communication with the media and the public  
23 regarding scientific research; and

24 “(D) information to ensure that covered  
25 individuals are fully aware of their rights and

1 responsibilities for administrative hearings and  
2 appeals established in the covered agency's sci-  
3 entific integrity policy.

4 “(f) REPORTING.—

5 “(1) ANNUAL REPORT.—Each year, each Sci-  
6 entific Integrity Officer appointed by a covered agen-  
7 cy under subsection (d) shall post an annual report  
8 on the public website of the covered agency that in-  
9 cludes, for the year covered by the report—

10 “(A) the number of complaints of mis-  
11 conduct with respect to the scientific integrity  
12 policy adopted under subsection (a)—

13 “(i) filed for administrative redress;

14 “(ii) petitioned for administrative ap-  
15 peal; and

16 “(iii) still pending from years prior to  
17 the year covered by the report, if any;

18 “(B) an anonymized summary of each such  
19 complaint and the results of each such com-  
20 plaint; and

21 “(C) any changes made to the scientific in-  
22 tegrity policy.

23 “(2) INCIDENT REPORT.—

24 “(A) IN GENERAL.—Not later than 30  
25 days after the date on which an incident de-

1           scribed in subparagraph (B) occurs, the head of  
2           a covered agency shall submit a report describ-  
3           ing the incident to the Office of Science and  
4           Technology Policy and the relevant Committees  
5           of Congress.

6           “(B) INCIDENT.—An incident described  
7           under this paragraph is an incident in which an  
8           individual, acting outside the channels estab-  
9           lished under subsection (e), overrules the deci-  
10          sion of the Scientific Integrity Officer with re-  
11          spect to a dispute regarding a violation of the  
12          scientific integrity policy.

13          “(g) OFFICE OF SCIENCE AND TECHNOLOGY POL-  
14          ICY.—The Director of the Office of Science and Tech-  
15          nology Policy shall—

16               “(1) collate, organize, and publicly share all in-  
17          formation it receives under subsection (f) in one  
18          place on its own website; and

19               “(2) on an annual basis, convene the Scientific  
20          Integrity Officer of each covered agency appointed  
21          under subsection (d) to discuss best practices for im-  
22          plementing the requirements of this section.

23          “(h) PERIODIC REVIEW AND APPROVAL.—

24               “(1) INTERNAL REVIEW.—The head of each  
25          covered agency shall periodically conduct a review of

1 the scientific integrity policy and change such policy  
2 as appropriate.

3 “(2) REVIEW BY THE OFFICE OF SCIENCE AND  
4 TECHNOLOGY POLICY.—

5 “(A) REVIEW OF SUBSTANTIAL UP-  
6 DATES.—The head of each covered agency shall  
7 submit to the Office of Science and Technology  
8 Policy for approval any substantial changes to  
9 the scientific integrity policy.

10 “(B) QUINQUENNIAL REVIEW.—Not later  
11 than 5 years after the date of the enactment of  
12 the Clean Economy Jobs and Innovation Act,  
13 and quinquennially thereafter, the head of each  
14 covered agency shall submit the scientific integ-  
15 rity policy to the Office of Science and Tech-  
16 nology Policy for review and approval.

17 “(i) COMPTROLLER GENERAL REVIEW.—Not later  
18 than 2 years after the date of the enactment of the Clean  
19 Economy Jobs and Innovation Act, the Comptroller Gen-  
20 eral shall conduct a review of the implementation of the  
21 scientific integrity policy by each covered agency.

22 “(j) DEFINITIONS.—In this section:

23 “(1) AGENCY.—The term ‘agency’ has the  
24 meaning given the term in section 551 of title 5,  
25 United States Code.

1           “(2) COVERED AGENCY.—The term ‘covered  
2           agency’ means an agency that funds, conducts, or  
3           oversees scientific research.

4           “(3) COVERED INDIVIDUAL.—The term ‘cov-  
5           ered individual’ means a Federal employee or con-  
6           tractor who—

7                   “(A) is engaged in, supervises, or manages  
8                   scientific activities;

9                   “(B) analyzes or publicly communicates in-  
10                  formation resulting from scientific activities; or

11                  “(C) uses scientific information or analyses  
12                  in making bureau, office, or agency policy, man-  
13                  agement, or regulatory decisions.

14           “(4) RELEVANT COMMITTEES OF CONGRESS.—  
15           The term ‘relevant Committees of Congress’  
16           means—

17                   “(A) the Committee on Commerce,  
18                   Science, and Transportation of the Senate; and

19                   “(B) the Committee on Science, Space,  
20                   and Technology of the House of Representa-  
21                   tives.”.

22   **SEC. 12503. EXISTING POLICIES; CLARIFICATION.**

23           (a) EXISTING SCIENTIFIC INTEGRITY POLICIES.—  
24   Notwithstanding the amendments made by this subtitle,  
25   a covered agency’s scientific integrity policy that was in

1 effect on the day before the date of enactment of this Act  
2 may satisfy the requirements under the amendments made  
3 by this subtitle if the head of the covered agency—

4 (1) makes a written determination that the pol-  
5 icy satisfies such requirements; and

6 (2) submits the written determination and the  
7 policy to the Director of the Office of Science and  
8 Technology Policy for review and approval.

9 (b) CLARIFICATION.—Nothing in this subtitle shall  
10 affect the application of United States copyright law.

11 (c) COVERED AGENCY DEFINED.—The term “cov-  
12 ered agency” has the meaning given the term in section  
13 1009 of the America COMPETES Act (42 U.S.C. 6620).

## 14 **Subtitle F—Other Matters**

### 15 **SEC. 12601. AUTHORIZATION.**

16 Section 112(a)(1)(B) of the Uranium Mill Tailings  
17 Radiation Control Act of 1978 (42 U.S.C. 7922(a)(1)(B))  
18 is amended by striking “September 30, 2023” and insert-  
19 ing “September 30, 2031”.

1 **SEC. 12602. ADDRESSING INSUFFICIENT COMPENSATION**  
2 **OF EMPLOYEES AND OTHER PERSONNEL OF**  
3 **THE FEDERAL ENERGY REGULATORY COM-**  
4 **MISSION.**

5 (a) IN GENERAL.—Section 401 of the Department of  
6 Energy Organization Act (42 U.S.C. 7171) is amended  
7 by adding at the end the following:

8 “(k) ADDRESSING INSUFFICIENT COMPENSATION OF  
9 EMPLOYEES AND OTHER PERSONNEL OF THE COMMIS-  
10 SION.—

11 “(1) IN GENERAL.—Notwithstanding any other  
12 provision of law, if the Chairman publicly certifies  
13 that compensation for a category of employees or  
14 other personnel of the Commission is insufficient to  
15 retain or attract employees and other personnel to  
16 allow the Commission to carry out the functions of  
17 the Commission in a timely, efficient, and effective  
18 manner, the Chairman may fix the compensation for  
19 the category of employees or other personnel without  
20 regard to chapter 51 and subchapter III of chapter  
21 53 of title 5, United States Code, or any other civil  
22 service law.

23 “(2) CERTIFICATION REQUIREMENTS.—A cer-  
24 tification issued under paragraph (1) shall—

25 “(A) apply with respect to a category of  
26 employees or other personnel responsible for



1           conducting work of a scientific, technological,  
2           engineering, or mathematical nature;

3           “(B) specify a maximum amount of rea-  
4           sonable compensation for the category of em-  
5           ployees or other personnel;

6           “(C) be valid for a 5-year period beginning  
7           on the date on which the certification is issued;

8           “(D) be no broader than necessary to  
9           achieve the objective of retaining or attracting  
10          employees and other personnel to allow the  
11          Commission to carry out the functions of the  
12          Commission in a timely, efficient, and effective  
13          manner; and

14          “(E) include an explanation for why the  
15          other approaches available to the Chairman for  
16          retaining and attracting employees and other  
17          personnel are inadequate.

18          “(3) RENEWAL.—

19                 “(A) IN GENERAL.—Not later than 90  
20                 days before the date of expiration of a certifi-  
21                 cation issued under paragraph (1), the Chair-  
22                 man shall determine whether the certification  
23                 should be renewed for a subsequent 5-year pe-  
24                 riod.

1           “(B) REQUIREMENT.—If the Chairman de-  
2           termines that a certification should be renewed  
3           under subparagraph (A), the Chairman may  
4           renew the certification, subject to the certifi-  
5           cation requirements under paragraph (2) that  
6           were applicable to the initial certification.

7           “(4) NEW HIRES.—

8           “(A) IN GENERAL.—An employee or other  
9           personnel that is a member of a category of em-  
10          ployees or other personnel that would have been  
11          covered by a certification issued under para-  
12          graph (1), but was hired during a period in  
13          which the certification has expired and has not  
14          been renewed under paragraph (3) shall not be  
15          eligible for compensation at the level that would  
16          have applied to the employee or other personnel  
17          if the certification had been in effect on the  
18          date on which the employee or other personnel  
19          was hired.

20          “(B) COMPENSATION OF NEW HIRES ON  
21          RENEWAL.—On renewal of a certification under  
22          paragraph (3), the Chairman may fix the com-  
23          pensation of the employees or other personnel  
24          described in subparagraph (A) at the level es-

1           tablished for the category of employees or other  
2           personnel in the certification.

3           “(5) RETENTION OF LEVEL OF FIXED COM-  
4           PENSATION.—A category of employees or other per-  
5           sonnel, the compensation of which was fixed by the  
6           Chairman in accordance with paragraph (1), may, at  
7           the discretion of the Chairman, have the level of  
8           fixed compensation for the category of employees or  
9           other personnel retained, regardless of whether a  
10          certification described under that paragraph is in ef-  
11          fect with respect to the compensation of the category  
12          of employees or other personnel.

13          “(6) CONSULTATION REQUIRED.—The Chair-  
14          man shall consult with the Director of the Office of  
15          Personnel Management in implementing this sub-  
16          section, including in the determination of the  
17          amount of compensation with respect to each cat-  
18          egory of employees or other personnel.

19          “(7) EXPERTS AND CONSULTANTS.—

20                  “(A) IN GENERAL.—Subject to subpara-  
21                  graph (B), the Chairman may—

22                          “(i) obtain the services of experts and  
23                          consultants in accordance with section  
24                          3109 of title 5, United States Code;

1 “(ii) compensate those experts and  
2 consultants for each day (including travel  
3 time) at rates not in excess of the rate of  
4 pay for level IV of the Executive Schedule  
5 under section 5315 of that title; and

6 “(iii) pay to the experts and consult-  
7 ants serving away from the homes or reg-  
8 ular places of business of the experts and  
9 consultants travel expenses and per diem  
10 in lieu of subsistence at rates authorized  
11 by sections 5702 and 5703 of that title for  
12 persons in Government service employed  
13 intermittently.

14 “(B) LIMITATIONS.—The Chairman  
15 shall—

16 “(i) to the maximum extent prac-  
17 ticable, limit the use of experts and con-  
18 sultants pursuant to subparagraph (A);  
19 and

20 “(ii) ensure that the employment con-  
21 tract of each expert and consultant em-  
22 ployed pursuant to subparagraph (A) is  
23 subject to renewal not less frequently than  
24 annually.”.

25 (b) REPORTS.—

1           (1) IN GENERAL.—Not later than 1 year after  
2           the date of enactment of this Act, and every 2 years  
3           thereafter for 10 years, the Chairman of the Federal  
4           Energy Regulatory Commission shall submit to the  
5           Committee on Energy and Commerce of the House  
6           of Representatives and the Committee on Energy  
7           and Natural Resources of the Senate a report on in-  
8           formation relating to hiring, vacancies, and com-  
9           pensation at the Federal Energy Regulatory Com-  
10          mission.

11          (2) INCLUSIONS.—Each report under para-  
12          graph (1) shall include—

13                (A) an analysis of any trends with respect  
14                to hiring, vacancies, and compensation at the  
15                Federal Energy Regulatory Commission; and

16                (B) a description of the efforts to retain  
17                and attract employees or other personnel re-  
18                sponsible for conducting work of a scientific,  
19                technological, engineering, or mathematical na-  
20                ture at the Federal Energy Regulatory Com-  
21                mission.

22          (c) APPLICABILITY.—The amendment made by sub-  
23          section (a) shall apply beginning on the date that is 30  
24          days after the date of enactment of this Act.

1 **SEC. 12603. OFFICE OF PUBLIC PARTICIPATION.**

2 Section 319 of the Federal Power Act (16 U.S.C.  
3 825q-1) is amended—

4 (1) in subsection (a)(1), by inserting “, to fa-  
5 cilitate communication with the public relating to,  
6 and participation by the public in, matters under the  
7 jurisdiction of the Commission, including under this  
8 Act and the Natural Gas Act” before the period at  
9 the end;

10 (2) in subsection (b), by striking paragraph (4)  
11 and inserting the following:

12 “(4) The Office shall promote, through outreach,  
13 publications, and, as appropriate, direct communication  
14 with entities regulated by the Commission—

15 “(A) improved compliance with rules and orders  
16 of the Commission; and

17 “(B) public participation in matters before the  
18 Commission.

19 “(5) The Director may assign staff to intervene, ap-  
20 pear, and participate in administrative, regulatory, or ju-  
21 dicial proceedings on behalf of individuals or entities inter-  
22 vening or participating, or proposing to intervene or par-  
23 ticipate, in proceedings before the Commission by rep-  
24 resenting the interests of such individuals or entities on  
25 any matter before the Commission.

1 “(6) The Office shall advocate for, and act as a liai-  
2 son with, environmental justice communities on matters  
3 under the jurisdiction of the Commission.”; and

4 (3) by adding at the end the following:

5 “(c) FUNDING.—Funding for the Office shall be de-  
6 rived from fees and charges collected under section 3401  
7 of the Omnibus Budget Reconciliation Act of 1986.

8 “(d) DEFINITIONS.—In this section:

9 “(1) COMMUNITY OF COLOR.—The term ‘com-  
10 munity of color’ means any geographically distinct  
11 area the population of color of which is higher than  
12 the average population of color of the State in which  
13 the community is located.

14 “(2) ENVIRONMENTAL JUSTICE COMMUNITY.—  
15 The term ‘environmental justice community’ means  
16 a community with significant representation of com-  
17 munities of color, low-income communities, or indig-  
18 enous communities, that experiences, or is at risk of  
19 experiencing, higher or more adverse human health  
20 or environmental effects.

21 “(3) INDIGENOUS COMMUNITY.—The term ‘in-  
22 digenous community’ means—

23 “(A) a federally recognized Indian Tribe;

24 “(B) a State-recognized Indian Tribe;

1                   “(C) an Alaska Native or Native Hawaiian  
2                   community or organization; and

3                   “(D) any other community of indigenous  
4                   people.

5                   “(4) LOW-INCOME COMMUNITY.—The term  
6                   ‘low-income community’ means any census block  
7                   group in which 30 percent or more of the population  
8                   are individuals with low income.

9                   “(5) POPULATION OF COLOR.—The term ‘popu-  
10                  lation of color’ means a population of individuals  
11                  who identify as—

12                   “(A) Black;

13                   “(B) African American;

14                   “(C) Asian;

15                   “(D) Pacific Islander;

16                   “(E) another non-White race;

17                   “(F) Hispanic;

18                   “(G) Latino; or

19                   “(H) linguistically isolated.”.

20   **SEC. 12604. BACKGROUND OZONE RESEARCH.**

21                  (a) STUDY ON BACKGROUND OZONE RESEARCH  
22                  NEEDS.—

23                   (1) IN GENERAL.—Not later than 60 days after  
24                  the date of enactment of this Act, the Administrator  
25                  of the Environmental Protection Agency shall seek



1 to enter an agreement with the National Academies  
2 of Sciences, Engineering, and Medicine (referred to  
3 in this section as the “National Academies”) under  
4 which the National Academies shall conduct a study  
5 on the current and future research needs regarding  
6 background ozone. The study shall—

7 (A) propose a framework of standard  
8 terms and definitions for types of non-local  
9 ground level ozone, including types of back-  
10 ground ozone, to standardize research on  
11 ground-level ozone;

12 (B) examine the current understanding of  
13 background sources of ozone and the contribu-  
14 tion of such sources to ground-level ozone in the  
15 United States to identify gaps in knowledge  
16 that need to be addressed with additional re-  
17 search;

18 (C) examine challenges in quantifying the  
19 sources of background ozone and the contribu-  
20 tions of each such source to ground-level ozone  
21 on a regional scale in the United States and  
22 identifies specific research needs to address  
23 these challenges;

24 (D) include an outline of a plan for a re-  
25 search and development program, including

1 specifications for costs, timeframes, and respon-  
2 sible agencies, to support analysis and dem-  
3 onstration of background ozone trends, includ-  
4 ing by—

5 (i) improving collection and observa-  
6 tional infrastructure;

7 (ii) improving confidence in model  
8 outputs;

9 (iii) reducing uncertainties in esti-  
10 mates of background ozone; and

11 (iv) making background ozone re-  
12 search outputs more useful and accessible  
13 to decision-makers; and

14 (E) identify opportunities for international  
15 engagement that may facilitate increased re-  
16 search collaborations that improve under-  
17 standing of ozone trends.

18 (2) REPORT.—As a condition of any agreement  
19 under subsection (a), the Administrator shall require  
20 that the National Academies transmit to Congress a  
21 report on the results of the study under subsection  
22 (a) not later than 24 months after the date on which  
23 such agreement is finalized.

1 (b) AUTHORIZATION OF APPROPRIATIONS.—There  
2 are authorized to be appropriated to carry out this section  
3 \$1,200,000.

4 **SEC. 12605. SMOKE PLANNING AND RESEARCH.**

5 (a) RESEARCH ON WILDFIRE SMOKE.—

6 (1) CENTERS OF EXCELLENCE.—

7 (A) IN GENERAL.—Not later than 180  
8 days after the date of enactment of this Act,  
9 the Administrator of the Environmental Protec-  
10 tion Agency (referred to in this subsection as  
11 the “Administrator”) shall establish at institu-  
12 tions of higher education 4 centers, each of  
13 which shall be known as a “Center of Excel-  
14 lence for Wildfire Smoke”, to carry out re-  
15 search relating to—

16 (i) the effects on public health of  
17 smoke emissions from wildland fires; and

18 (ii) means by which communities can  
19 better respond to the impacts of emissions  
20 from wildland fires.

21 (B) AUTHORIZATION OF APPROPRIA-  
22 TIONS.—There is authorized to be appropriated  
23 to the Administrator to carry out this para-  
24 graph \$10,000,000 for each of fiscal years  
25 2021 through 2025.

1 (2) RESEARCH.—

2 (A) IN GENERAL.—Not later than 180  
3 days after the date of enactment of this Act,  
4 the Administrator shall carry out research—

5 (i) to study the health effects of  
6 smoke emissions from wildland fires;

7 (ii) to develop and disseminate per-  
8 sonal and community-based interventions  
9 to reduce exposure to and adverse health  
10 effects of smoke emissions from wildland  
11 fires;

12 (iii) to increase the quality of smoke  
13 monitoring and prediction tools and tech-  
14 niques; and

15 (iv) to develop implementation and  
16 communication strategies.

17 (B) AUTHORIZATION OF APPROPRIA-  
18 TIONS.—There is authorized to be appropriated  
19 to the Administrator to carry out this para-  
20 graph \$20,000,000 for each of fiscal years  
21 2021 through 2025.

22 (b) COMMUNITY SMOKE PLANNING.—

23 (1) IN GENERAL.—Not later than 180 days  
24 after the date of enactment of this Act, the Adminis-  
25 trator shall establish a competitive grant program to

1 assist eligible entities described in paragraph (2) in  
2 developing and implementing collaborative commu-  
3 nity plans for mitigating the impacts of smoke emis-  
4 sions from wildland fires.

5 (2) ELIGIBLE ENTITIES.—An entity that is eli-  
6 gible to submit an application for a grant under  
7 paragraph (1) is—

8 (A) a State;

9 (B) a unit of local government (including  
10 any special district, such as an air quality man-  
11 agement district or a school district); or

12 (C) an Indian Tribe.

13 (3) APPLICATIONS.—To be eligible to receive a  
14 grant under paragraph (1), an eligible entity de-  
15 scribed in paragraph (2) shall submit to the Admin-  
16 istrator an application at such time, in such manner,  
17 and containing such information as the Adminis-  
18 trator may require.

19 (4) TECHNICAL ASSISTANCE.—The Adminis-  
20 trator may use amounts made available to carry out  
21 this subsection to provide to eligible entities de-  
22 scribed in paragraph (2) technical assistance in—

23 (A) submitting grant applications under  
24 paragraph (3); or

1 (B) carrying out projects using a grant  
2 under this subsection.

3 (5) AUTHORIZATION OF APPROPRIATIONS.—

4 There is authorized to be appropriated to the Ad-  
5 ministrator to carry out this subsection \$50,000,000  
6 for each of fiscal years 2021 through 2025.

7 **SEC. 12606. BUDGETARY EFFECTS.**

8 The budgetary effects of this Act, for the purpose of  
9 complying with the Statutory Pay-As-You-Go Act of 2010,  
10 shall be determined by reference to the latest statement  
11 titled “Budgetary Effects of PAYGO Legislation” for this  
12 Act, submitted for printing in the Congressional Record  
13 by the Chairman of the Senate Budget Committee, pro-  
14 vided that such statement has been submitted prior to the  
15 vote on passage.

